DECK II

MACINTOSH MULTITRACK AUDIO WORKSTATION SOFTWARE

VERSION 2.1

USER'S GUIDE

DECK II Designed and Created by:
Mats Myrberg, Josh Rosen, John Dalton and Jeff Moore

Manual by:
Josh Rosen and Kathy Tafel

Deck Logo by:
Ingrid Schulz

Special Thanks to:
Ron MacLeod, Tom Dimuzio, Haroon Tahir, Joe Niski, Tommy King, Marsha Vdovin, Jeremy Sagan, Martin Weber, Ayelet Sela and Jon Beck.

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INTRODUCTION

Preface

The last 10 years have seen a radical change in the way that music and sound are recorded. A decade ago, the world of high-fidelity multi-track recording and sync-to-picture belonged solely to record companies, post houses and commercial ventures. Independents were considered extremely lucky to have access to a low-quality four-track.

For the individual, the process of taking a project from concept to completion was extremely arduous. It required many redundant steps and cost quite a bit of money. An idea began as a poor-quality 'scratch' version, and was eventually re-recorded on better equipment in a studio that charged by the hour. After all the time and expense, the 'energy' of the original idea was often lost in the re-recording process, while control of the project fell to the outside sources responsible for funding it. It was nearly impossible to produce an independent product that matched the quality of high-budget productions.

In 1988, Digidesign's Sound Tools system finally broke this barrier by offering a CD-quality digital stereo recording environment that could capture any audio signal at extremely high fidelity. But this still didn't solve every problem. Using a Macintosh, musicians and sound designers could now record mono or stereo digital masters, but it was still impossible to record one track while listening to another, and there was no way to play back MIDI sequences simultaneously with audio.

In 1990 OSC released DECK to fill this void. DECK was the first Macintosh software that allowed true four-track recording and simultaneous MIDI file playback, and that year it won the MacUser Eddy award for Best Music Product. DECK's simple interface was based on the integrated 'portable studio' metaphor, and required no knowledge of MIDI. It looked and functioned like a four track cassette mixer/recorder, but it turned any Macintosh with a Digidesign NuBus™ card into a CD-quality production environment. Version 1.0x of DECK has been used extensively over the last few years to produce albums and CDs, and for basic commercial sync work.

Since DECK's original release, OSC spent extensive time designing the next generation of digital workstation software for Digidesign. Released in 1993, DECK II represented the culmination of this work and it again won the MacUser Eddy for Best New Music and Sound Product.

DECK II offers a host of features that original DECK lacked, and it really represents the least expensive full-function workstation technology available. Here are just a few of the functions that differentiate DECK II from original DECK:

- Non-destructive multitrack visual waveform editing with track and region slip
- Unlimited virtual tracks
- True SMPTE resynchronization
- Playback of multitrack audio in the background
- Synchronized QuickTime™ video-from-disk in a window
- 24-bit moving fader automation with visual editing
- Support of simultaneous MIDI file playback from compatible MIDI sequencers running *on the same Macintosh*

OSC has continued to improve DECK II. The release of version 2.1 of DECK II includes the following powerful new features:

- Support of Macintosh 840 AV (8 tracks) and 660 AV (6 tracks), and the Spectral Innovations NuMedia card
- Eight-track upgrades available for Pro Tools and supported hardware
- MIDI file playback from within DECK II
- Virtual Track mixing
- Region Library window for tracking source material

DECK II uses a variety of hardware systems that turn a Macintosh computer into a true multitrack digital audio workstation. DECK II offers a host of high-end synchronization, editing, mixing and audio processing functions previously available only on extremely expensive professional systems. And DECK II drives full-featured MIDI sequencers (like OSC's METRO sequencer) in the background keeping

them synchronized to any audio tracks you might record or create. And perhaps best of all, the audio quality of all DECK tracks and processing matches the fidelity of a compact disc.

This is what DECK II means to the individual: You can record your basic ideas digitally from the very beginning. Then, over time, add and edit digital audio and MIDI tracks to your composition and synchronize your elements to video decks or QuickTime video. You can then use DECK II to create a fully digital stereo audio master. If you wish, transfer that master digitally to a digital audio tape (DAT), and press your CDs digitally, directly from the DAT master. Or you can print your stereo master directly to timecoded DAT or center track for delivery. Finally, every step in multitrack production of digital audio is in the hands of the individual.

Who uses DECK II?

DECK II is intended for a variety of users. Musicians can use it as a composition environment, and produce CDs or CD-quality demos from the original tracks. Video post production sound designers can use it for typical audio sweetening and layback tasks. Multimedia producers can use it as a self-contained QuickTime post production environment. MIDI studios can use it to record final audio tracks over existing MIDI tracks. Anyone with an interest in audio and a capable Mac system can benefit from DECK II.

To use DECK II, you will need hardware that supports 16-bit audio recording and playback. You can use a Macintosh AV machine right out of the box. You will need to plug in stereo miniplugs (1/8") into the input and output jacks on the back of your computer. You can also use Digidesign's Audiomedia or Audiomedia II card, Sound Tools II system, or Pro Tools system. You install the Digidesign cards in one of your Macintosh's slots. The Audiomedia cards have standard RCA-type audio input and output jacks on the back. You plug monophonic inputs into the input jacks, and amplified speakers or headphones into the output jacks. You can plug a high-impedance microphone directly into the Audiomedia's mic jack. The Audiomedia II has no mic jack,

but offers digital input/output connections in SPDIF format. The Sound Accelerator II card connects to an external Audio Interface box. The Audio Interface box has standard balanced +4 XLR audio input and output jacks on its back. You plug monophonic inputs into the input jacks, and monophonic outputs or amplified speakers into the output jack. The Sound Tools II and Pro Tools systems have better signal-to-noise ratios, which means that their audio fidelity exceeds that of the Audiomedia cards'. You may also use the Spectral Innovations NuMedia card or RasterOps MediaTime card. The NuMedia card has a high-impedance mic jack, stereo miniplug line in/output as well as digital in/output in optical format. The MediaTime card has standard RCA-type audio input and output jacks on a break-out box which plugs into the card on the back of your computer.

Hardware Requirements

In order to install and use DECK II, you will need:

1) A Macintosh 840AV or 660 AV.

   Or, if you do not have an 840AV or 660AV:

   a) A Macintosh IIx, cx, ci, vx, LC II, LCIII, Quadra, Performa 400/600 or Centris 650 running System 7.1 or higher and QuickTime 1.5 or higher.

   If you wish to run DECK II on a IIfx, you will need to obtain Apple's IIfx Serial Switch CDEV. The serial switch CDEV is a control panel device document that goes in your System folder. It allows you to set your IIfx to run in "faster" mode or in "compatibility" mode. DECK II requires that your IIfx be set to "compatibility" mode. Unfortunately, Apple ships all IIfx machines set to "faster" mode, and does not include the switch CDEV as a part of the System software. Contact Apple or Digidesign for more information.

AND:

b) Digidesign's Audiomedia, Audiomedia II, or Sound Tools II or Pro Tools system or RasterOps' MediaTime system or Spectral Innovations' NuMedia system.

2) Four megabytes of RAM allocated to the program. More is recommended.

3) A hard disk with an average access time of 27ms or better, and a throughput comparable to the drives covered in the Appendix. A large hard disk is recommended, since audio and QuickTime video require quite a bit of disk space.

Individual manufacturers are not always the best source for speed information about their drives. Digidesign has encountered many instances where actual hard drive access and throughput varied considerably from the manufacturers specification sheet. To be sure that you are getting a capable hard drive, see About Hard Disks in the appendix of this manual.

To record and play back tracks you will also need:

1) To Record: A line-level sound source (mixing board, electronic instrument, CD player, turntable, cassette player, etc.).

2) To Play Back: A stereo amplifier and speakers or powered speakers.

OSC's Update and Support Policy

As a new DECK II owner, the first action you should take is to send in your registration card. You must be a registered owner if you want to receive telephone support, program updates, or new product information.

Once you are a registered owner, program updates will be made available to you free, or for a minimal charge (depending on the nature of the update).

OSC is serious about customer support , and is strongly committed to a continuing relationship with you after your purchase.

Please feel free to contact OSC directly with any questions or problems. A DECK II consultant will be standing by to help you during business hours (Monday to Friday, 8:00AM to 4:00PM PST). For DECK II customer service, call **(617) 969-0754 or FAX (617) 928-0038**. Remember to have your DECK II master disk handy when you call or FAX.

You may also contact us through CompuServe. You will find us in the MIDI Vendors C forum (Type "GO MIDI.")

OSC is made up of people who are very interested in audio, sound design, and the recording process as a whole. Become one of our registered owners and participate in the creative process.

Eight-Track Tool Owners

If you have purchased the Eight-Track Tool from OSC for use with your supported hardware (ProTools Systems), be sure to install it according to instructions. Whenever you read "four active playback tracks" in this manual, remember that you have eight active playback tracks.

How to Use This Manual

This DECK II manual has been designed to give you basic background, operational information, production ideas, and a reference source for using DECK II.

If your immediate interest is getting a better picture of what DECK II does, install the hardware and software as described in Chapter 2, and

skip right to the 'Using' chapters of the manual (Chapters 4, 5, 6 and 7). These chapters give you step-by-step directions for accomplishing all of the different DECK II recording, editing, MIDI, synchronization, and mixing functions.

DECK II is an advanced multitrack digital recording and editing system that is really very easy to use. Because recording and wave-form editing are at the base of most DECK II functions, it will be very helpful if you understand the basic principles of recording and sound waves before you start. If you are not experienced in digital recording and waveform editing, make sure to read through the recording and mixing information in Chapter 3.

Important: Watch for notes in the margin throughout this manual. You will find that they usually contain additional information and important hints.

This DECK II manual is divided into ten chapters (including Appendix and Index). Here are short explanations of what you'll find in the each of the chapters:

Chapter 2: Getting Started
Chapter 2 contains all of the information you will need to install the DECK II software. It also explains how to configure your software and set up the audio inputs and outputs so you can record multiple tracks, and hear them play back.

Chapter 3: Digital Recording, Editing and Mixing Basics
Chapter 3 offers the basic background information you will need to understand what DECK II is doing, and how you can get the most out of digital multitracking. It explains in rudimentary fashion how sound is recorded, what a waveform is, how the digital mixing board works, and what fader automation means. The chapter is intended for people who have no digital recording experience and little computer experience, but who have an interest in recording, editing and mixing concepts.

Chapter 4: Creating and Recording Sessions
This chapter offers in-depth explanations of every process you will use to create a new Session, record tracks, punch in new tracks and save your work. Use this chapter to learn about starting a project with DECK II.

Chapter 5: Visual Waveform Editing - The Track Window

This is perhaps the most important chapter in the manual. It offers in-depth explanations of every process you will use to create and edit waveform regions, slip tracks, spot regions to picture, create and edit visual automation envelopes, and much more. Whenever you need to know how to accomplish a visual editing tack in the Track window, consult Chapter 5.

Chapter 6: Using MIDI

Chapter 6 focuses on all MIDI functions, from setup to synchronization. Consult this chapter if you plan to synchronize to SMPTE timecode, import a MIDI file, or use DECK in conjunction with the METRO sequencer.

Chapter 7: Sychronizing, Mixing and Mastering

Chapter 6 focuses on the specific setup you will need to do sync work, and on the final tasks in most audio recording processes: Mixing and mastering. All aspects associated with real-time fader automation recording, audio bouncing and submixing, virtual mixing, and creating of a final mono or stereo master file are discussed at length.

Chapter 8: DECK II Reference

This chapter contains specific reference information about the DECK II windows, controls, indicators, and menu commands. You will use it when you are trying to figure out what a particular control or function does, and how it works. The chapter begins with a simple explanation of the DECK II Mixer, Track windows, Transport and QuickTime windows, and continues on to detailed information about each DECK II command and function.

Appendix

The Appendix contains tips for fine-tuning your system, a list of recommended hard disks, and a list of suggested reading.

TWO

GETTING STARTED

Installing and Configuring the Hardware and Software

Before you can begin using DECK II, you will need to configure your
hardware and the DECK II software on your computer. The hardware
consists of the internal DSP chip if you own a Macintosh AV or a single
card that fits into any slot in your Mac, along with an external interface
box (if you have Sound Tools II or Pro Tools). The software consists of
the protected DECK II application. Since the software relies on the
hardware, its best to install the hardware first. Here's how to do it:

If you own a Macintosh AV:

1) Open up the Sound Control panel from the Apple menu.

2) Select Effects. Be sure to set effects to "None."

3) You are ready to install the software.

To install the Audiomedia (or similar) card in your Mac:

1) Turn off your Macintosh and unplug it. Take your monitor off of
   the central processing unit (CPU), if you keep it there.

2) Open the top of the CPU box as shown in this diagram:

Installing Your Card

Cover release buttons

Audiomedia II card

Stereo inputs*

Mac II-style CPU

Stereo outputs*   Digital I/O

*Sound Tools II, Pro Tools and MediaTime cards connect via computer cable
to an external I/O box.

3) Remove any one of the plastic slot covers on the back of the Mac. This will be the slot for your audio card. (Any slot can be used.)

4) Touch the Macintosh's power supply to discharge your body's residual static charge.

5) Make sure that your hands are clean and dry. Unwrap the Audiomedia card and bring it over to the CPU.

   Handle the audio card by its edges only. Do not touch the components on the card front or the lines (traces) on the card's back. Touching these areas may damage the card.

6) Face the part of the card that has the jacks toward the back of the Mac. Carefully press down on the top edge of the card to seat it in the NuBus™ slot. Don't force it. If it doesn't slide in relatively easily, take it out and try again.

7) Make sure that the card is seated firmly, and that the metal ear at the top back edge of the card rests in its housing.

   On some Macintosh CPUs, there is no 'ear' at the top back edge. The card will simply rest firmly in the slot.

8) Carefully snap the Mac case closed, plug in the computer, and start it up.

You are now ready to install the DECK II software, which is the last major step before you can begin recording and editing sound. Here's how to install the software:

To install the DECK II software on your hard disk:

1) Restart your Macintosh while holding the Shift key down. This will prevent your System Extensions (INITs) from booting and possibly interfering with the installation process.

2) Put the **DECK II Program** disk into any drive.

   An open diskette window will appear on your Desktop.

3) Create a folder (using the New Folder command on the File menu) and drag the **DECK II application** to the new folder.

After a few moments a copy of the DECK II application will appear in the destination folder.

4) Put the **DECK II Extras** disk into any drive.

An open diskette window will appear on your Desktop.

5) Drag the **DECK II Resources** document to the same folder that contains the DECK II application.

After a few moments a copy of the DECK II Resources will appear in the destination folder. DECK II only runs when you have the DECK II application and Resources document in the same folder.

6) **If you have a Digidesign card,** drag the DigiSystem INIT to your System folder.

The DigiSystem INIT will automatically be placed in the Extensions folder within your system folder. **Install this INIT only if you have a Digidesign audio card installed in your Macintosh.**

7) Drag the QuickTime™ INIT to your System folder.

The QuickTime™ INIT will automatically be placed in the Extensions folder within your system folder. DECK II required QuickTime, so please make sure that this extension is installed.

8) Insert the **DECK II Program** disk again and double-click on the DECK II application icon. This dialog will appear:

> ⚠ You are running DECK II™ from the master diskette. Authorized copies can run on your hard disk without requiring this master diskette.
>
> Select Setup to install or remove authorization for any available hard disk. Otherwise select Quit because this application is compressed and can't run from the floppy master diskette.
>
> [Quit] [Setup...]
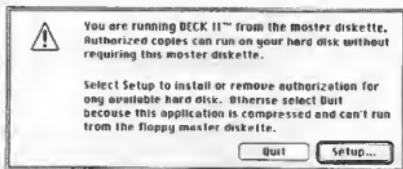
9) Click on the Setup button. This dialog appears:

> DECK II™ will run on any authorized hard disk without
> requiring the master diskette. You have a remaining
> authorization count of 2.
>
> Select Authorize to install authorization to a hard disk or
> Deauthorize to remove authorization. Select Quit to quit.
>
> [Authorize] [Deauthorize]   [Quit]
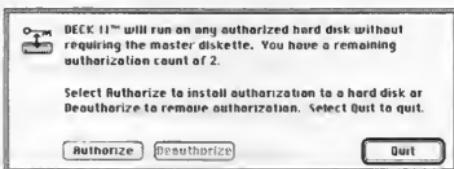
DECK II uses a new, more friendly copy protection scheme. Rather than requiring the typical software install/deinstall process, the DECK II protection allows you to 'authorize' up to 2 hard disks. You can run your DECK II software on any authorized hard disk, and you can move your DECK II software between any authorized hard disks. **Authorized hard disks can be optimized with no risk to the software.** You can also 'deauthorize' any hard disk using your DECK master diskette, in order to return to your original authorization count. Then you are free to authorize other drives.

10) Click on the Authorize button. This dialog appears:

> Authorize: [⊂ ProStore ▼]
>
> Click OK to authorize DECK II™ to run on the selected
> hard disk. If successful, your authorization count
> will be decremented.
>
> ☐ Make a copy of the application on the hard disk.
>
>   [Cancel]   [OK]
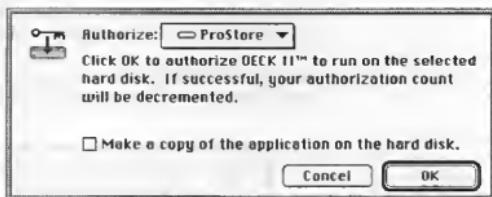
11) Use the Authorize pop-up to select the hard disk you wish to authorize. Then click on OK.

The authorization process is now complete. Eject your DECK II Program disk and store it in a safe place.

12) Restart your Macintosh.

Important: When you have restarted your Mac, you can run DECK II. Please note, however, that DECK II is compressed. It will automatically decompress the first time you run it. Once DECK II is decompressed, it will never need to be decompressed again.

WARNING: Like many CPU-intensive programs, **DECK II does not run well with File Sharing turned** on. Although DECK II will run with File Sharing on, its performance will be greatly degraded. For better results, make sure file sharing is turned off before you begin your DECK II Session.

Your hardware and software is now installed, and you're ready to begin working with sound. The only thing you still need to do is hook up audio inputs and outputs. The next section tells you how to do this.

Hooking Up the Audio Inputs and Outputs

DECK II basically turns your Mac into a multitrack digital workstation, but like any recorder/editor, you will need to hook it up so signal can be routed into the inputs, and the outputs can be amplified for listening in some way.

Here is a diagram that shows a very simple audio setup:

Hooking Up Audio Input and Output

* The Sound Tools II, Pro Tools and Media Time systems use external boxes for input and output, as there are no inputs on the back of these cards.
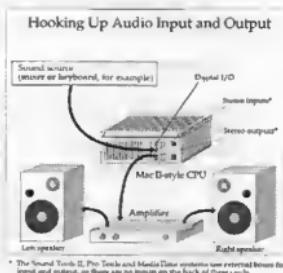
As you can see from the diagram, the output from the source you wish to record are fed into the left and right audio card (Audiomedia) or audio interface inputs (Sound Tools II or Pro Tools), and the audio card or audio interface outputs are then fed to an amplifier attached to speakers or headphones.

The extra mic input on the original Audiomedia card is for high-impedance microphones, which are very inexpensive, and can be plugged directly into the card. This extra input has a built-in microphone preamplifier, so use it only with a high-impedance mic.

AV Users: It is most likely you will be converting 1/4" jacks coming from your audio source to the 1/8" stereo miniplugs that fit in the back of your computer. **Warning:** Use standard 1/8" adapters for the input. The longer .75" miniplug (like the one on the Apple Microphone) will touch a 5mV power supply, which is used to power the microphone preamp. For true stereo input, simply use a standard 1/4"-to-1/8" stereo mini plug adapter. The same standard 1/8" adapter will work just fine for the audio going out to your amplifier.

Important: If you are using the NuMedia card the above information also applies. Also, make sure you understand how to navigate the Sound Control Panel to switch inputs. Be sure that you have selected 16-bit stereo audio and a sample rate that is the same as your session (44100 Hz, for example) using the Sound Control Panel.

Hooking Up an External Mixing Board

DECK II is designed to function properly with a wide range of instruments, but for serious projects, you will probably want to consider using a small mixing board to route signal to and from the audio card or audio interface box. This allows you to adjust your input signals over a wider range, facilitates the use of external effects, and prevents you from constantly plugging and unplugging inputs and outputs. Here is a diagram illustrating one way to hook up DECK II and your system using a small mixing board:

Using DECK with a Simple Mixing Board
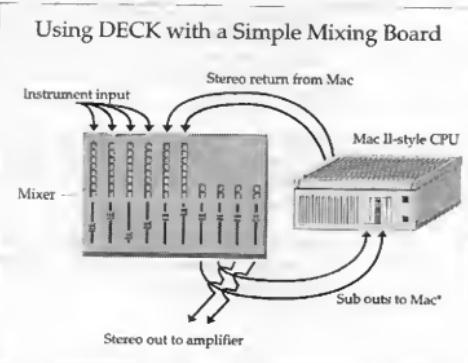
* The Sound Tools II, Pro Tools and MediaTime systems use an external box for input and output, so there are no I/O connections on the back of these cards.

This is a very simple but flexible setup. It allows you to play and monitor every source, and provides routing for processing DECK II tracks externally and re-recording them. Remember, as with any flexible system, you must take care not to set up a feedback loop. Specifically, *do not route the stereo return from DECK II back into DECK II, unless you are re-processing a DECK II track.* Depending on your mixing board, you may have other options for sending DECK II its own submix, and monitoring DECK II using dedicated returns. The most flexible setup will depend on your particular board.

If you are not using a component amplifier and speakers for audio playback, it is also possible to hook the Sound Tools and Audiomedia output jacks directly to powered speakers, such as AR Powered Partners™ or Bose Roommates™. For more information, consult your Digidesign or RasterOps manual.

Important: Connect and disconnect audio jacks ONLY with all signal generators and amplifiers turned down or off.

On the back of the original Audiomedia card you will find a 1/4-inch pre-amplified microphone input. This input is always 'on' in DECK II, and you can use it to mix in a third input while recording. Note, however, that it does not have a separate input level control, so you will be responsible for matching signal levels.

Remember, DECK II allows you to record CD-quality audio, but it will only sound as good as your playback system allows. Tiny low-powered speakers will greatly diminish the quality of your audio playback.

Once you have DECK II and your hardware system hooked up as illustrated, you are ready to begin recording, editing, and mixing digital hard disk audio.

THREE

DIGITAL RECORDING
AND MIXING BASICS

Introduction

Although DECK II uses complex technologies to accomplish its recording, editing and mixing tasks, it is based on two familiar pieces of equipment – the tape deck and the multichannel mixing board. DECK II uses your hard disk as the multichannel tape deck, and your Macintosh screen as the mixing board and editing table. Anyone who has used a portable four-track recorder will find the DECK II program 'look' very familiar, and since DECK II operates your hard disk as tape, it also takes care of the standard tape deck tasks. However, since DECK II adheres closely to the tape deck metaphor, it is important to remember that a basic understanding of multitrack recording concepts is essential for you to get the most out of the program. Also, since 'waveforms' are used to represent sound for visual editing, a simple familiarity with these sound wave representations is very helpful.

This chapter is devoted to explaining the digital recording and mixing concepts you will need in order to understand DECK II, and illustrating the simple ideas behind waveforms. If you are an experienced sampler and you have operated a multichannel board and recorder, feel free to skip to the next chapter. However, if you are new to multitrack recording and editing (or interested in a review), this chapter will give you the background knowledge you need to produce high-quality digital multitrack recordings.

Basic Sampling Concepts

DECK II accomplishes its direct-to-disk recording tasks using a method called **sampling**. Unlike normal magnetic tape recording, which records an audio signal as a continuous charge on magnetic tape, a sampler converts an audio signal to discrete numbers which are then stored on a digital storage medium (a hard disk, for example).

Digital sampling of audio tracks is generally superior to the standard analog recording methods – not only because it offers extremely high

fidelity, but because it avoids the standard tape generation and 'play-back degradation' problems. Because sampled audio is stored as a set of numbers, there is no loss of fidelity when you copy those numbers, regardless of how many 'copies of copies' you make. Also, because the disk medium is not physically strained by playback (as is a reel of analog tape when it is pulled across the playback heads), repeated playback of a digital track will not alter or degrade that track in any way. For these reasons (among others), digital recording of audio tracks has become the method of preference for many contemporary producers.

The process of digital recording (or sampling) is really quite simple: An audio signal is fed into a computer (or dedicated sampling device). That signal is run through an **analog-to-digital converter** (ADC), which measures the amplitude (volume) of the signal at regular intervals and passes these measurements or 'samples' on to a storage medium. When the recorded track or tracks need to be played back, the samples are retrieved from the storage medium and run through a **digital-to-analog converter** (DAC), which converts those samples back into a continuous wave. The signal that comes out of the DAC is the output signal, and it is a nearly exact image of the signal that was fed into the ADC. Here is a diagram illustrating the way in which samples of an incoming audio signal are taken:

Taking Samples of a Sound Wave

• = one sample

Amplitude

Time ⟶
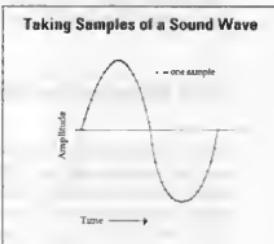
As you can see, the incoming audio wave is approximated by a series of discrete points that describe that wave. The physical representation

of this wave is called a 'waveform.' The nature of this process illustrates one of central questions of digital recording: How accurate is the digital representation of the original analog signal? To determine this you will need to understand the concept of sample rate.

Sample rate is the number of samples of a waveform that you take in a single second, and it has a very strong influence upon the quality of the recording you make. At best, a collection of samples is an extremely good approximation of the original input signal. By taking many samples of an audio signal, you end up with a more accurate depiction of the wave – fewer samples yield a less accurate, 'grainy' depiction. Here's an illustration:

Why Sample Rate Affects Fidelity

Higher Sample Rate   Lower Sample Rate
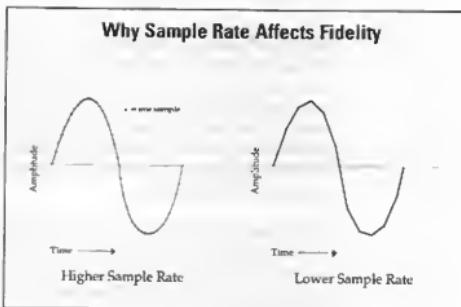
Notice how a higher sample rate yields a more accurate, and therefore higher-fidelity recording. Unfortunately each sample requires storage space. Since a higher sample rate takes more samples per second, it will require more disk storage space for each second of audio than a lower rate. DECK II uses set sample rates of 44,100 Hz or 48,000 Hz. A

sample rate of 44,100 Hz means DECK II takes 44,100 samples every second and puts them on your hard disk. This is the same rate used by compact discs, and it allows you to record frequencies up to 22,050 Hz accurately. Since normal human hearing ranges approximately from 20 Hz to 17,000 Hz, the sample rate of 44.1 kHz generally offers more than enough fidelity. DECK II also offers a sample rate of 48,000 Hz, which is the basic rate used by many digital audio tape (DAT) recorders. This higher sample rate actually allows you to record frequencies up to 24,000 Hz, but since these frequencies are outside the audible range for most humans, it is generally unnecessary to use this higher rate for fidelity purposes.

MIDI and Hard Disk Audio

Music and sound on the personal computer has changed radically over the last ten years. Most people in the audio industry are very aware of these changes, particularly due to the development of the MIDI standard in the early eighties. MIDI, which stands for Musical Instrument Digital Interface became the accepted communications standard for electronic musical instruments, and it can now be found on virtually every electronic keyboard, drum machine, trigger device, tone generator and effects unit.

MIDI was originally conceived as a 'remote control' standard that would allow musicians to control multiple instruments from a single keyboard, but it rapidly developed into an audio network environment. The creation of MIDI sequencers is perhaps responsible for the importance that MIDI holds today.

MIDI sequencers opened the door to personal audio recording by offering an inexpensive way to record and play back multiple-track compositions without a tape deck. However, MIDI sequencers do not accomplish this feat by recording an actual audio signal. You can think of a MIDI sequence as a player piano roll. The MIDI sequencer records events that occur at your keyboard – what key you pressed,

how hard you pressed it, how hard you're holding it down, and when you let go. These little pieces of information, called MIDI events, are picked up and remembered by the sequencer as a sequence. To play the sequence, the sequencer sends the recorded events *back* to the keyboard, essentially playing the keyboard every time the sequence is played back.

Sequencing offers some new possibilities. For example, you can change the sound that is on a certain track by loading a different sound onto the keyboard. The sequencer is just playing notes, and it pays no attention to what sound it is playing. You can also change the tempo of a recorded MIDI sequence without changing the pitch of the notes (unlike tape, which changes pitch when playback speed is changed).

But the concept of MIDI has some inherent weaknesses that can be a great cause of frustration. For example, how do you record a guitar track, or a vocal track, or a sax? These entities are purely audio signals – they have no natural place in the MIDI world. This is where DECK II comes in. Although DECK II is a full-function digital multi-track recorder, it both supports and augments MIDI. By running DECK II alone or OSC's METRO sequencer (or any other supporting sequencer) on your Mac along with DECK, you can add full synchronized MIDI functionality to any audio session. If you have an existing MIDI sequence, you can import it into DECK II and record multiple audio tracks over it. If you wish to save disk space, you can use METRO to add MIDI tracks to your DECK II multitrack audio recordings. DECK II and METRO provide an environment where full-functioned MIDI and synchronized digital audio coexist.

Digital Multitracking and the Mixing Board Metaphor

There are perhaps two characteristics of the Macintosh that have made it the machine it is today: An enforced standard interface and a visual environment that lends itself easily to metaphors. Most of the popular Macintosh programs offer an interface that mimics something familiar.

By doing so, a software developer makes it easy for users to immediately understand what a program does and how it works.

DECK II is an example of this principle. The DECK II interface looks like a simple four track mixer with some additional controls and surfaces. If you have used a portable multitrack device, then you should find recording and mixing with DECK II will be very intuitive. If you haven't, then some background may be very helpful.

Take a look at this illustration of the DECK II Mixer and Transport windows:

The mixing board consists of four vertical input/output modules, each with VU meters that register signal level. The input/output modules

all look the same because they each represent one of DECK II's four digital record/playback tracks. (Remember that DECK II allows you to create an unlimited number of tracks, but only four of those tracks play at one time.) Each of the input/output modules has two modes – record and play. Record allows you to feed a signal into your audio card, set its monitor level, and record it to your hard disk. Once a track is recorded, play mode lets you play that track back, adjust its playback levels, and run automate its level or pan (placement in the stereo field).

The buttons in the Transport window function just as they would on a normal tape recorder. They allow you to rewind, fast forward, play, stop, and record DECK II's four digital tracks. They also offer controls for storing location times, punch times, mixer states, and for adjusting playback pitch.

Recording from Scratch

The production lifecycle of a DECK II project might progress like this: You record a first track on track 1. Then you play back track 1 to make sure you like it and set its volume level. Next, record track 2 while listening to track 1. Now play both tracks back while recording track 3. Follow this same procedure to record track 4. (Remember, you can also record 2 or 4 tracks at once, depending on hardware.) Then listen and mix levels and pan on all four tracks. If abrupt or smooth volume level or stereo pan setting changes are required, you can automate these changes. When you are satisfied, you may choose to mix to a master stereo file for pressing a CD or album, or for playback from within a QuickTime movie, HyperCard™, SuperCard™, Director™, etc.

The process detailed above is essentially the same one you would follow if you were using an analog multi-track tape deck and mixing board. However, DECK II is a digital recorder, so there are some special points you will wish to consider.

The Input Signal: The input signal is the audio signal that you wish to record. It must be plugged into one of the audio inputs on the audio card or audio interface box. The left and right inputs of the Audiomedia and Audiomedia II cards are unbalanced -10dBU 'line level' inputs. That means they expect something like a keyboard or small mixer to be plugged in directly. If you plug a microphone or electric guitar into the left or right input you will have trouble making it loud enough. This is because sources with low level signals like mics and guitars are generally run through a pre-amplifier, which allows you to adjust their levels over a wider range.

The Sound Tools II and Pro Tools system audio interface boxes offer inputs that are +4dBU balanced line level inputs. These inputs do not expect you to plug in a keyboard or semi-pro mixer directly. In order to get the most out of these systems, you should make sure that all signals routed to the inputs are truly balanced and brought to the correct level using a pre-amplifier or professional mixer.

The original Audiomedia card has a small built-in pre-amp connected to its Mic input, and you can plug a microphone or electric guitar directly into this input. However, to get the most out of your DECK II system, you may wish to place a small mixing board between your sound sources and your original Audiomedia card. This would allow you to plug all of your instruments, CD players, and microphones into a single device, and use that device to choose what is routed to DECK II. You could also use the mixing board to monitor the DECK II outputs.

Digital Distortion: When you feed a signal into any recorder, including DECK II, you always need to adjust the input level so that you are optimizing your dynamic range. Essentially this means that your input signal should register as high as possible on your input meter without turning on the clip light. If the input level is too low, the recorded track will be noisy. If the signal is too high, it will be clipped.

Clipping is a situation that results when you feed a signal to a recorder or mixer if that signal is louder or 'hotter' than the device allows. On many analog tape decks, a little clipping seems to add warmth to the sound – often by increasing use of the noise reduction circuitry (Dolby

B or C, for example). In digital recording, clipping is to be avoided at all costs. It causes digital distortion, which almost always sounds truly terrible.

Automated Punching In and Out: Automated punching in and punching out are extremely important concepts in multitrack recording. To understand the need for these functions, picture this situation: You are recording the last track of a five minute multitrack piece. You finish the track and listen to it playing back. During playback you realize that the track is perfect, except for a tiny mistake near the end.

Punch in and punch out are functions designed to cope with this problem. To fix the bad section, you would set a punch-in point just before it and a punch-out point just after it. Then you would re-record the track. During the recording process you would hear the original track right up to the punch-in point. At that moment the recording deck switches to record mode and you would play over the mistake. When the punch-out point is reached, the recording deck automatically switches out of record mode. This automated punch-in and punch-out have made it possible for you to re-record only a small portion of a track, without requiring that you operate the tape transports.

Bouncing Tracks and Virtual Mixing: One of the basic problems inherent in multitrack recording has always been the limited number of tracks. What do you do in a four track environment if you have five separate instruments to record? There are two answers to this question.

One way to squeeze extra material into a multitrack environment is to mix incoming signals together and record them on a single track (multiple vocal tracks, for example). This method offers a high-fidelity solution, but it has a few serious drawbacks. Specifically, the relative level and tone of the different signals cannot be changed independently after they are recorded. Using the vocal example, you can't turn up one voice without turning up the other.

Bouncing, the other solution to the track limitation problem, offers more flexibility but hurts the overall fidelity of analog tracks. In a four

track environment you might bounce tracks like this: Record three separate tracks and mix them with the relative level and EQ you want. Then record the three mixed tracks to the fourth track. Since the three source tracks now exist as a single track, you are free to replace the originals with new tracks. In the analog world this method increases the number of recordable tracks, but each bounced track ends up being a "recording of a recording," and the overall fidelity deteriorates.

DECK II offers the same track mix and track bounce capabilities you find in analog recording, but with some major improvements. The most important difference is that DECK II bounces tracks with no loss of fidelity. Since all DECK II tracks are digital, no noise is added during a bounce and no high frequencies are lost. DECK II also allows you to save your original digital source tracks on an archiving medium (a large hard drive, removable drive, or tape backup). This makes it possible to retrieve and 're-bounce' tracks long after they would have been erased in analog multitrack recording.

If you have a large hard drive you may want to consider using DECK II's virtual mixing feature instead of bouncing tracks. Virtual mixing is a concept that really is not available in the analog world. Analog mixers are physically limited to the number of tracks that can be recorded. By using a Macintosh digital workstation, you are not hindered by the limitations of the analog world. DECK II does not do its mixing in real-time, so there is no limit to the amount of audio it can mix at one time except hard disk space. DECK II allows you to record as many tracks as you like and mix them all together during the final mixing process. Virtual mixing is explained at length in Chapter 7.

Audio File Formats and the DECK II "Session" file

A DECK II Session is a Macintosh document that contains a 'map' of a specific recording project. This diagram should give you a better idea of how a DECK II Session is organized:

Structure of a DECK II Session
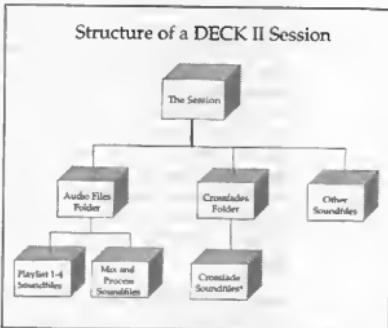
* Crossfade files are created and managed by DECK II. They should not be edited or altered.

A Session file may contain any number of audio regions and playlists. Each audio playlist contains a list of audio regions that are located on your hard disk(s). An audio playlist is a like a playback direction sheet. It tells DECK II what pieces of what audio files to play, and when to play them. Audio playlists make it possible to play any audio file regions in any order, and they oversee this playback in a non-destructive fashion: If you want to repeat something ten times, the same disk region is played ten times in a row. If you want ten minutes of silence, no disk region is played. A DECK II Session is able to play back four of these playlists simultaneously – the top four tracks (the four tracks represented in the Mixer window) are your playback tracks. They contain the playlists that will play at any one time.

A DECK II Session also remembers all mixer states (snapshots) and autolocation settings, and all fader settings and window configurations. When you double-click on a Session, the Session window appears exactly as it was saved, and the associated audio playlists and automation data are loaded automatically.

New Audio Files: When you create a new DECK II Session, no audio files exist for that Session. At any time you have the ability to load existing monophonic Sound Designer II or Audio Interchange File Format (AIFF) audio files into the Track window, and to construct from those audio files an audio playlist than you can play. You can also create a new audio file by recording a new track. Whenever you record a new track in DECK II, that track is saved in a new audio file named with the name of the track's playlist. These audio files are placed in the Audio Files folder (which is in the same folder as the Session document). You will always create a new audio file every time you record onto a new playlist. When you punch in on an existing playlist (or after the end of an existing playlist) **that audio is always added to end of that playlist's audio file in the Session's Audio Files** folder.

Support of different audio file formats: DECK II supports Sound Designer II, AIFF, Sound Resource and QuickTime audio files, but the native playback and record format is Sound Designer II mono. When you select and add any files that are not in Sound Designer II mono form, DECK II will automatically make a Sound Designer II mono copy of those files in the Sessions Audio Files folder. If you select a stereo file, two mono files will be created. Since non-Sound Designer II mono files need to be converted in this fashion, adding them to your Session will require more disk space, and may take a few moments.

Note: If you move an audio file that is referenced by a Session to a new place on the hard disk (or to another hard disk), DECK II will always prompt you to find those missing audio files when you next open the Session.

What is 'Non-destructive' Recording?

DECK II uses 'non-destructive' recording technologies, which are far more powerful than original DECK's simple linear erase recording. It is very important to understand the concept of non-destructive recording if you are going to get the most out of DECK II.

In the world of analog audio, there is only one kind of recording: Destructive. Whenever you record onto a track of analog tape, the new signal permanently replaces whatever was on that track before. If you record something on track 1, and then record something else over the same time, the original recording is erased and replaced with the new audio. Such is the nature of magnetic tape.

Because DECK II runs on a computer, it offers you many new and different options. You can think of your DECK II Session document as a kind of 'audio database.' It keeps track of all the audio regions you have recorded and added, and it plays then back according to how you recorded or placed them. Because of this, DECK II is capable of keeping track of many more soundfiles and audio regions than you are using, and DECK uses this capability to allows non-destructive recording.

DECK II recording is non-destructive because the process of recording never replaces or deletes any audio file data. Instead, new data is always recorded and 'mapped in' to the position of the old data. If, for example, you record a track, and then punch-in a replacement take over one bar in the middle of that track. When the new take is recorded, it is simply added as new data to the drive, and this new data region appears over the old take. Because nothing was erased, you can return to your original take at any time. You could even record ten new takes and chose between them later. The benefits of this scheme are obvious: You never have to risk erasing a section of audio just because you want to try another take or audition another region in the same place. Because of this scheme, you can also bounce four tracks to one track without erasing the destination track, and you can always go back to your original tracks and 're-bounce' them for a new submix. These facts make non-destructive recording one of the most powerful features associated with digital audio workstations.

There is, however, one drawback to non-destructive recording. Since you never delete old audio by recording new audio over it, your hard disk will have a tendency to fill up more quickly, especially if you are recording multiple long takes. DECK II offers you a tool for dealing with all of this data. Its called the **Compact Session** command. This command automatically looks at the current Session and finds all of the audio in your source audio files that is not used on any track, in

any form. Then it deletes all of the unused audio. Executing this command does not take very long, and it will free up all of the disk space that had been occupied by unwanted audio. The combination of non-destructive recording and the Compact Session command make it possible for you to make sure that you have the greatest flexibility, and still consume the minimum hard drive space. For more information, read about the Compact Session command in the Reference chapter of this manual. Make sure you understand how Compact Session works before you use it.

Fader Automation

After you have recorded all of the tracks of a multitrack project, you are ready to begin the mixdown process. It is called 'mixdown' because you will be combining all of the monophonic tracks to create a stereo master. You will use the stereo master to make your final product – whether that is a compact disc, album, cassette, DAT, 1/4" tape, or a disk file for multimedia purposes.

In the typical home recording environment, final mixdown is accomplished by playing back the multitrack source repeatedly. During each playback pass you set levels, and practice moving the faders to fade the audio in and out, change levels, change send settings, etc. When you have practiced the mix enough to feel confident, you attempt to 'perform' it as you record it to a mastering deck. This is usually a very touchy process that is both inconsistent and inaccurate.

Professional recording studios get around this problem by using mixing consoles that 'automate' the movement of all faders. Mixing boards that support fader automation often allow the engineer to set up board 'states' where the position of every fader is recorded, and assign those states to particular times during the recording. Some of the more advanced automated mixing consoles even record the physical motion of each fader and replicate that motion on every playback run. The major drawbacks of this type of automation are expense and complexity. Generally the cost of moving fader automation puts it outside the reach of the individual.

DECK II gets around these problems by offering moving fader auto-
mation as a software entity, rather than a piece of hardware. After you
have recorded digital tracks, you can use DECK II to record any
adjustment you make to volume and pan. You can also capture fader
states for all DECK II faders and assign those states to specific times in
the recording. You can view and edit all of these control adjustments
in a visual fashion. These tools allow you to build up a mix slowly and
save that mix as one of a series of different mixes. When it comes time
to create a stereo master, you can be assured of exactly the same level
settings and fader transitions every time.

Synchronizing Sound to Picture

For many people, sound editing tasks are aimed specifically at enhanc-
ing or complementing visuals. These tasks, typically referred to as
'audio post-production' or 'sweetening' put very specific requirements
on audio technology. Generally the sound editor begins with finished
picture (in video or film form) and perhaps some rough guide tracks
on video tape, audio tape, or magnetic film. The post-production
process then consists of editing the existing audio, adding new dialog,
effects, ambiences and/or music. Then the editor would automate a
mix of all sound components, and create a stereo (or more-track)
master, which is again recorded back to the video master or to another
time-referenced master (timecoded digital audio tape or center track
1/4" tape, for example.)

DECK II offers all of the basic audio functions you will need to create
sound tracks, synchronize those sound tracks to picture, automate
your mix, and create a CD-quality digital stereo master.

DECK II differs from conventional analog systems in a number of
ways. Particularly important is the fact that DECK II records, bounces,
processes, and mixes your audio completely in the digital domain.
This guarantees you the maximum editing control with little or no
added processing or generation noise. Also, since all the computer is

used as the platform for control, you are free to use the synchronization method of your choice. This makes it possible for you to use SMPTE timecode as your sync source, or to work entirely off your hard disk by using QuickTime video picture as the sync source. For more information about these methods, see Chapter 7 of this manual.

Final Stereo Mixdown

Generally speaking, final stereo mixdown is the last step in any multitrack production. In order to distribute any audio project, you will need to put it into a form that is available everywhere. That means compact disc, CD ROM, digital or analog cassette tape, video tape or vinyl. Unfortunately, of these media only analog cassette tapes and video tapes can be recorded cheaply at home, and these formats generally do not offer optimal fidelity.

In the professional recording world, the final stereo master has traditionally been recorded on analog two track reel-to-reel tape. This tape is then used as the image for duplicating albums, CDs, videos, films, or cassettes. Although this is the status quo, quality reel-to-reel mastering machines are quite expensive to own or use, and a number of high-fidelity, affordable new options are appearing.

Perhaps the most promising of the new mastering media is digital audio tape (DAT). Coupled with DECK II and your Macintosh, DAT mastering offers a relatively inexpensive, extremely high-fidelity solution that can be used directly for producing CDs, albums or cassettes. If you own an audio card that offers only analog outputs, you can hook the analog audio outputs of the card to the analog inputs of a DAT recorder and create a final digital stereo master that rivals the quality of most studios. Using a timecoding DAT machine even makes it possible to create time-referenced masters.

If you are an Audiomedia II, Sound Tools II or Pro Tools owner, an even more advanced method is possible. You can use DECK II to

create a full-digital stereo master on your hard disk. Then, using your S/PDIF or AES/EBU output, you can transfer the digital master directly to digital audio tape, *without a single analog step*. Basically, this offers mastering fidelity that rivals high-end studios, and it runs right on the Mac desktop.

Archiving Suggestions

Audio is a complex phenomenon, and you need quite a bit of data to describe it. Recording audio to your hard disk will use a very notice-able amount of disk space – approximately 5 megabytes per track minute of one track audio. For this reason it is a good idea to have some type of archiving medium for keeping master and backup copies of your recordings. Here are some devices that are very useful for archiving purposes:

Erasable Optical Drives: These drives store 128 megabytes, 600 mega-bytes, or more on a single removable cartridge. Since the medium is magneto-optical (a combination of magnetics and laser technology), the cartridges have few moving parts and a relatively long storage life. Unfortunately they have not yet proved fast enough for reliable four track recording. They are generally quite useful (although expensive) as a medium for archiving and exchange.

Removable Platter Drives: These drives store 44 or 88 megabytes on a removable magnetic platter cartridge. Although some implementa-tions of the mechanism are fast enough for four track recording and playback, most are not. Generally speaking, the standard 44 or 88 megabyte Syquest removable drives are not extremely useful as a recording or archiving medium, because they hold less than 15 single-track minutes of audio at full fidelity.

WORM Drives: WORM drives can record data once and will contain that data from that point on. They are extremely high-capacity (900 megabytes or more), but they cannot be erased or rewritten. They have a very long storage life, and are useful as a long-lasting master archive. They are not fast enough for four track recording or playback.

Streaming Tape Drives: Streaming tape drives are generally the least expensive data backup devices. They store data on magnetic tape (8mm, DAT, or 4mm tape, for example) in sequential fashion, so they tend to be relatively slow, but the media costs are minimal. Because these mechanisms are built for backing up data, they provide a great deal of data integrity and verification, and they allows you to back up *any* document (unlike simple audio DAT backup). For many situation, these drives offer the best price/performance ratio.

DAT Recording Decks: If you are an Audiomedia II, Sound Tools II or Pro Tools owner, you can use your AES/EBU or SPDIF digital outputs to transfer soundfiles to a digital audio tape recorder for storage and retrieval. This is perhaps the best backup alternative for audio professionals, because DAT recorders are also full-function digital tape decks that allow you to listen directly to any stored audio file.

FOUR

CREATING AND RECORDING
SESSIONS

Introduction

This chapter of the DECK II manual focuses on the specific tasks you'll need to understand, in order to get the most out of DECK II. As you have probably observed, DECK II generally looks and acts just like a portable four track mixer and recorder. In most cases DECK II is very similar to its analog counterpart – it allows you to record tracks, monitor them while recording other tracks, adjust the level of what you've recorded, and mix down your recording to a master. However, DECK II also offers many features you would not find on a portable multitrack recorder, including advanced visual waveform editing, non-degrading track bounce, multi-point autolocation, moving-fader automation, and CD-quality 16-bit audio. If you want to understand more about DECK II's most powerful functions or if you have a specific task in mind, this chapter is for you. For specific information about menu commands or screen controls, see the Reference chapter of this manual.

Starting DECK II and Creating a New Session

Before you can start using DECK II for multitrack recording, you will need to install both the DECK II software and your hardware. If you have not done so already, then read through the Getting Started chapter of this manual. If your software and hardware are already installed, then you're ready to begin.

To start up DECK II and create a new Session:

- Double-click on the DECK II icon. After a few moments the DECK II menu bar appears.

- Choose the New command on the File menu. This dialog appears:
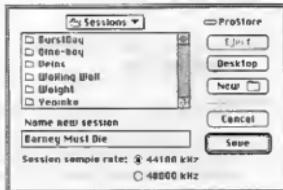
This is DECK II's New file dialog. Use it to choose the sample rate of the Session you will be creating and set the name and destination folder for your audio files. Generally you will use the 44.1 kHz sample rate – it is the CD standard rate. If you are recording from DAT, and that DAT has a sample rate of 48 kHz, then you will choose the 48 kHz rate. See the Basic Sampling Concepts in the previous chapter for more information about sample rates.

- You have now created a new Session. Choose the **Mixer** command and then the **Transport** command on the Windows menu.

The Mixer and Transport windows will appear on your screen. They look like this:
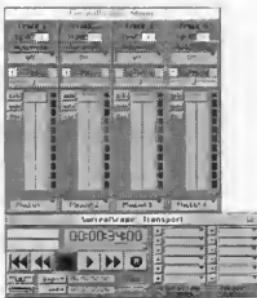
Note: You can change the default position of all DECK II windows (used when a new Session is created) using the Save Settings as Template command on the Preferences submenu.

The DECK II Mixer window is one simple window you will use for control of audio recording and playback. However, before you go much farther, make sure you understand the DECK II 'Session' concept. It is explained in the previous chapter.

Using DECK II to Open, Save, and Close Sessions

Unlike most Macintosh documents, a DECK II Session is both a file and a 'map' that keeps track of other files. For this reason, you will need to pay extra attention to standard Mac file maintenance tasks. Here are directions for opening, saving and closing DECK II Sessions:

To open an existing DECK II Session:

• Start up the program and wait until the DECK II menu bar appears.

• Choose the Open Session command on the File menu. This dialog appears:
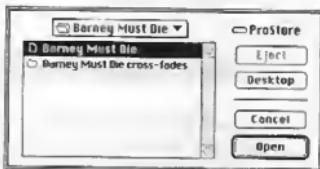
This is DECK II's Open dialog. Use it to highlight the name of the Session you wish to open. Remember, Session files keep track of the associated soundfiles, and they contain automation and other

important data. You cannot use the Open Session command to open a soundfile. Instead, you must create a new session and add or load an existing soundfile.

To save a DECK II Session:

• Choose the Save command on the File menu.

This saves the current Session file and its automation and other data. Audio edits and changes to automation or location times are not saved to disk until you choose the Save command. Remember, however, that hard disk audio files are recorded directly to disk. Therefore they are saved the moment that they are recorded. If you wish to save the current Session under a new name, choose the Save a Copy as command. For more information, see the Reference chapter of this manual.

To close a DECK II Session:

• Choose the Close command on the File menu.

If you have already saved the Session, the Session will be closed and the Session window will disappear. If you attempt to close a DECK II Session without saving it, a dialog box will appear and offer you a last chance to save before closing. If you choose No, your Session changes will be lost.

Adding Existing Soundfiles

Since DECK II is a hard disk recording program, it is compatible with a range of hard disk soundfile formats. This is a particularly important feature for producers who wish to record multiple tracks over existing mono or stereo disk-based soundfiles. DECK II offers a simple method for bringing in existing hard disk tracks as DECK II tracks. You use the Add Audio to Clipboard command, and paste that audio at the desired location the Track window. The Regions window keeps track of all source material added to the Session in this manner. DECK II

uses monophonic soundfiles in the Sound Designer II format. If you add any other type of hard disk soundfile, DECK II will automatically copy the soundfile and convert the copy to the correct format.

Note:

DECK II does not convert all sample rates automatically. If you wish to add a soundfile to the current Session, that soundfile's sample rate must be an integer multiple of the Session sample rate. (For example, if the Session sample rate is 44100 Hz, then DECK II will convert a sound file that was sampled at 11025 Hz or 22050 Hz, but not one that was sampled at 13436 Hz.) If it is not at the correct sample rate, use Sound Designer II to convert it to the correct rate.

To add a soundfile or soundfile region:

• Make sure you have a DECK II Session open. Then choose the Add Audio to Clipboard command on the File menu. This dialog box appears:
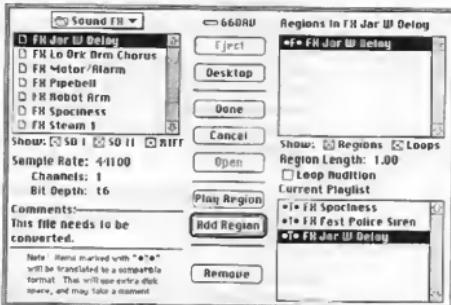
• Use this open dialog to highlight the soundfile you wish to load (or the soundfile that contains the region you wish to load).

When you highlight the soundfile, you will see a list of the regions within that soundfile in the regions list in the upper right-hand corner of the window. The top region always represents the entire file.

• In the regions list, click to highlight the region you wish to add.

You can audition the highlighted region at any time by clicking on the Play Region button. If you wish to hear what a loop will sound like, check the Loop Audition box.

• If you wish to add the selected region to the current playlist, click on the Add Region button.

The added regions appear in the lower right-hand side of the dialog, in the Current Playlist area. This is the list of regions that will be placed on the Clipboard. Remember, at any time you can remove regions from the current playlist by selecting the region you wish to remove and clicking on the Remove button.

• Continue the above process until you have added all of the regions you desire, then click on the Done button.

All of the regions you selected are now on the Macintosh Clipboard, and you will be returned to the DECK II Track window. The Track window is where all of DECK II's audio editing occurs. See Chapters 5 and 8 for specific instructions and extensive information about the Track window.

• Click once on any track to place the cursor at the location where you wish the audio regions to appear. Then choose the Paste At or Paste After command.

Hint: All audio added to your Session in this manner will appear in the Regions window. Use the Regions window to spot individual regions to specific points.

The Clipboard regions appear on the selected track or tracks. Remember, if some of the selected regions or files were stereo regions, make sure to select two tracks before you paste.

You have now added existing audio to the current Session. To play it back, just click on the Play button in the DECK II Transport window. (You can also simply click the cursor in the Track window at the point where you wish playback to start and then press the space bar. Press the space bar again to stop playback.) If you wish to verify which soundfiles are being used in the current Session, see the Session Info command on the File menu.

Recording the First Track

The first step in most multitrack recording projects is recording the first track. In many ways the first track is the most important, because it often becomes the framework upon which other tracks are built. If the basic timing of the first track is sloppy, the entire production will be affected, so record your first track with care.

If you plan to integrate MIDI into a DECK II Session, it is a good idea to plan for this from the very beginning. If you have an existing MIDI sequence and you wish to record audio over that sequence, then make sure to load the MIDI file into DECK II's MIDI window before recording any audio. If you wish to record audio first and then lay in MIDI tracks, you may wish to record the audio tracks in time to a MIDI metronome, which can be supplied in real-time from the METRO software running in the background; you can also accomplish this by recording a simple MIDI click file and importing it into your Session. Doing this assures you that your recorded MIDI tracks will be easy to edit in any sequencing program after they are recorded. To learn more about the integration of MIDI and audio, see the Using MIDI chapter of this manual.

To record your first track in DECK II:

- Make sure you have a DECK II Session open, and that a sound source is hooked up to the audio card inputs. To hear what you are recording, you should also hook up the audio card outputs to an amplifier with speakers or a headphone amp.

- Click and drag on the Input selector near the top of the track to select the audio card input from which you wish to record.

- Record-enable the track (or tracks) upon which you wish to record by clicking on its Rec button. This will turn the Rec button red, and the Track VU will now be an input level VU. This is how the channel should look:

- Begin playback of your source signal. Set the input level so that the channel VU meter registers a high signal level, with no clipping. The incoming signal should keep the VU meter as close to the top without turning the clip light on. The clip light indicates that audio recorded at this level will be distorted. Turn off the clip light by clicking on it, and adjust your signal.

Note: Multiple tracks can be recorded at once, but no two **record** tracks cannot be set to the same input. If you attempt to do this, DECK will warn you and prevent you from putting the track into record.

Important: If you have an AV machine, Audiomedia card or MediaTime card, you will set the input level by using the Input Level pop-up on the Options menu. If you have any other audio card, you will need to adjust the level of your signal source to the correct volume.

- Adjust the monitor level of the track you're recording by sliding the channel fader up or down.

  When you have a track record-enabled, the track volume fader adjusts the volume level for **monitoring** the track. It does not change the record level. (When the track is not record-enabled, the track volume fader adjusts the output level of any audio that is already on the track. This volume can be set to a different level than the input monitor volume, which is useful during punch-in recording.) You should use the track faders to adjust playback volume to your liking, but always make sure that the input level is set so that the channel VU meter registers a high signal level, with no clipping.

- When you are ready to record the track, click on the tape transport's Record button, and then on the tape transport's Play button. Both will be highlighted:

  As soon as you click on the Play button, DECK II begins recording. DECK II will record until you hit the tape transport's Stop button (or until you run out of hard disk space).

- When you are done recording, click on the tape transport's Stop button.

  You have recorded the first track. You are now free to rerecord it, punch in on it, record another track, or edit the recorded track in the Track window.

To hear the track you just recorded:

- Click on the tape transport's Return-to-zero button, and then on the Play button.

Your recorded track is now being played back, and you should see DECK II's track VU registering audio level. To adjust the output level of your recorded track, slide its volume fader up (louder) or down (quieter). To pan the track left or right in the stereo image, adjust the track's pan fader.

If you are satisfied with the track you just recorded, you can now go on to recording the next track. If you wish to re-record the track, repeat the procedure you just used. If you wish to re-record only a few select areas of the track, see the information about punch in/punch out recording, later in this chapter.

You are now ready to record your second track.

Recording the Second, Third, and Fourth Tracks

The steps you follow to record your second, third, and fourth tracks are exactly the same as those you followed for the first track. The only real difference is that you will be recording these tracks while listening to other tracks you've already recorded. For this reason, there are some extra steps you'll need to take to set the playback levels of the previously recorded tracks.

To record your second, third, and fourth audio tracks in DECK II:

- Record-enable the track upon which you wish to record by clicking on its Rec button. This will highlight the track's Rec button.

- Begin playback of your source signal (your instrument, microphone, etc.). Set the input level so that the track VU meter registers a high signal level, with no clipping.

Important: If you have an Audiomedia or MediaTime card, you will set the input level by using the Input Level pop-up on the Options menu. If you have any other audio card, you will need to adjust the level of your signal source to the correct volume.

- Adjust the relative monitor levels of the all tracks by sliding their volume faders up or down.

  The track fader adjusts the volume level for monitoring each track, including the track you are about to record. It does not change any record level. You should use the track faders to adjust the playback volumes of every track to your liking. If you wish to make a dry run through the material in order to set the relative volumes of the recorded tracks (and the track you are about to record), you can click on the tape transport's Play button. This will play all recorded tracks, and allow you to audition the track you are about to record (without recording it). This is the best way to set the monitor levels of the different tracks before recording.

- When you are ready to record the new track, click on the tape transport's Record button, and then on the tape transport's Play button. Both will be highlighted.

  As soon as you click on the Play button, DECK II begins recording. During the recording process you will hear a mixture of all recorded tracks and the track you are recording. DECK II will record until you hit the tape transport's Stop button (or until you run out of hard disk space).

- When you are done recording, click on the tape transport's Stop button.

To hear the tracks you have recorded:

• Click on the tape transport's Return-to-Zero button, and then on the Play button.

Your recorded track is now being played back, and you should see DECK II's track VU meters registering audio level. To adjust the output levels of your recorded tracks, slide the track faders up (louder) or down (quieter). To pan the tracks left or right in the stereo image, adjust the tracks' pan faders.

Important: If you are running OSC's METRO sequencer, you can record MIDI and digital audio simultaneously. To do so, simply record enable your DECK track and press the record button in the DECK II Transport window. Then switch to METRO and record your MIDI track. DECK II will automatically record in the background, and when you return to DECK II you will see your new tracks in the Track window. For more information, see the Using MIDI chapter of this manual.

A Note about Bouncing Tracks and Virtual Mixing

By nature, multitrack recording imposes certain limitations on the producer. All tape recorders have a fixed number of available tracks, and at some point those tracks will be full. In traditional tape recording, one remedy for this problem has always been 'bouncing,' or mixing together of existing tracks to open up more recording tracks. Like analog tape machines, DECK II offers you the ability to bounce tracks, but DECK II's bounce functions differ from tape in three major ways: DECK II accomplished all of its bouncing in the digital realm (introducing no noise or signal degradation), DECK II allows you to maintain an unlimited number of source tracks, and DECK II can bounce four tracks to one or two tracks (so you don't need to keep a destination track open for the bounce). DECK II bouncing functions are handled in the Track window, where visual marking and control greatly speed the process. For specific information about bouncing tracks, see the Bounce to Clipboard commands explained in Chapter 5 and in the Reference chapter of this manual.

One of the advantages of using a digital workstation is that you are not limited to a fixed number of tracks. While DECK II is limited by

computer speed and data access rate to four play tracks, you can record an infinite amount of tracks and move them to work tracks. Work tracks store all information including automation for each track. You can use the virtual mix feature to mix work tracks and play tracks together. Your only limit to the number of tracks is hard disk space. **For specific information about virtual mixing, see the Virtual Mix command explained in Chapter 7 and in the Reference chapter of this manual.**

Location Times

On the right-hand side of the DECK II Transport window you see two sets of six pop-up menus. The six pop-ups on the left are DECK II's Location Time buttons. The Location Time pop-ups look like this:
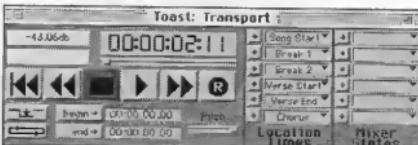
For those familiar with multitrack recording devices, these are the DECK II's 'autolocate memories.' Each of these six pop-up menus gives you access to the full list of all location times you have ever stored. The arrows directly to the left of each menu are the controls that you will use to record and playback location times. To use the location time menus and buttons, follow these steps:

To set location times using the Location Time arrow buttons:

• Hold down the command key and click on the arrow button directly to the left of the position that should hold that time.

You have now recorded a location point. Note that you can record location positions while a Session is playing, or you can scrub or play the Session to a particular spot and record the time button while playback is halted.

Hint: You can automatically record Location Times simply by pressing the Enter key on your Mac keyboard. All location times are added to the Location Times pop-up, and may be loaded onto any location position.

To recall location times using the Location Time arrow buttons:

• Click on the arrow button directly to the left of the position to which DECK II should locate.

You are immediately located to that position. Whenever you click on that arrow button (or select a location on the pop-up) you will immediately be 'popped' to its time. This is true whether DECK II is playing back or stopped. Note that you can pop to locate positions while a Session is playing or while playback is halted.

Hint: All locations times also store the current loop/punch Start and End times. To recall a location time **with its Begin and End** times, just hold down the control key when you click on a Location Time arrow button.

Hint: As with most pop-up menus in DECK II, **you can rename the item that is currently visible in the pop-up** by holding down the command key and clicking on that pop-up. When you do this, a dialog will appear that allows you to type in a new name for the location time.

Loop (Rehearse) Mode

Most quality multitrack decks have a special 'rehearse' or 'loop' mode that lets you define a section of your recording, and automatically loop playback of that section over and over. This is particularly useful for

practicing along with a short section of a session in preparation for recording a track, or for evaluating potential loops for arrangement purposes.

DECK II also has a loop mode designed just for these purposes, but unlike a tape machine, DECK II loops from loop end to loop beginning seamlessly, with no rewind time. Although there are many ways to use DECK's loop mode, here are basic instructions:

To set loop begin and end times, and turn on loop play:

• Scrub the small 'begin' tape counter to the desired loop start point.

> begin → | 00:00:04:24

You can scrub the counter by clicking and holding down the mouse over the counter. When the cursor changes to right/left arrows, drag to the right (forward) or left (backward) to set the exact point in the recording. Scrubbing this way will play audio as the counter moves. If you wish to slide the counter value without hearing audio, hold down the shift key. Then click and drag the mouse over the 'begin' tape counter. To set the punch time with the keyboard, hold down the command key and click on the begin counter. Then use the ensuing dialog to set your time.

Hint: You can also click on the 'begin->' and 'end->' buttons to pick up the current master counter time. This is useful if you wish to set the loop begin and end times while a Session is playing back. After the times have been picked up, you can fine tune them by using the scrubbing procedure described in the previous paragraph.

Hint: Command click on the 'begin->' and 'end->' buttons to transfer their times to the Transport window's master counter.

• Scrub the small 'end' tape counter to the desired loop end point.
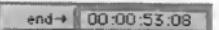
> end → | 00:00:53:08

You have now set the begin and end times of the loop.

Hint: All locations times also store the current loop/punch Start and End times. To recall a location time with its Begin and End times, just hold down the control key when you click on a Location Time arrow button.

• Click on the Loop button to highlight it.

Loop mode is now turned on, and the portion of the Session between the begin and end times will play back repeatedly.

Note: Loops may not be shorter that 0.5 seconds. If you try to set a loop that is shorter that half a second, DECK II will automatically turn off the loop.

• Click on the tape transport's Play button to play back the loop. Click on the Stop button to halt playback.

Hint: There are a number of tools that greatly enhance the usability of Loop mode. You can automatically move the selection range (in the Track window) to the begin and end counters using the Set Punch Times From command on the Option menu's Display Tools submenu (or move the other direction using the Set from Punch Time command). You can also use other commands on this submenu to select automatically the waveform range between the begin and end times indicated in the Transport window. (See the Reference chapter of this manual for more information.) Finally, when the Track window is open, you can press the 'C' key at any time. This issues a Cue command, which automatically sets the Transport window's start and end times to match the current selection and turns on Loop mode.

Hint: Remember, Location Times store the loop begin and end times as well as the main counter time. To recall a location time with its loop begin and end times, hold down the control key when you recall that location.

Automated Punch In/Punch Out

Although sometimes a recorded track is perfect after the first try, in most situations at least part of the track will need to be recorded again. Picture, for example, a five-minute vocal track that has only a single line with a mistake. As the engineer on this session, you would wish to make one more recording pass and replace only a small piece of the recorded track. In traditional recording, this process of piecemeal replacement is called 'punch-in' recording.

To punch in a small section of a track, a second person used to be required. This person would watch the time on the track, and physically punch the record button at the start of the section to be replaced. When the end of the replacement section was reached, the person would punch the record button out to prevent erasing any section of the track that should be kept. This was a risky process, and an unclean punch often damaged good sections of the track. For this reason, high-end multitrack recording decks began to offer automated punch-in and punch-out points. These points could be set carefully and stored, and at the time of replacement recording, the punch in and punch out points were handled automatically.

DECK II offers automated punch-in/punch-out recording for the same reasons. Here's how it works:

To punch-in and punch-out a track section automatically:

• Scrub the small 'begin' tape counter to the desired punch-in point. This will be the point where replacement recording automatically begins.

begin → 00:00:04:24

You can scrub the counter by clicking and holding down the mouse over the counter. When the cursor changes to right/left arrows, drag to the right (forward) or left (backward) to set the exact point in the recording. Scrubbing this way will play audio as the counter moves. If you wish to slide the counter value without hearing audio, hold down the shift key. Then click and drag the mouse over the 'begin' tape counter. To set the punch time with the keyboard, hold down the command key and click on the begin counter. Then use the ensuing dialog to set your time.

Hint:

You can also click on the 'begin->' and 'end->' buttons to pick up the current master counter time. This is useful if you wish to set the loop begin and end times while a Session is playing back. After the times have been picked up, you can fine tune them by using the scrubbing procedure described in the previous paragraph.

- Scrub the small 'end' tape counter to the desired punch-out point. This will be the point where replacement recording automatically ends.

`end→ 00:00:53:08`

You have now set your punch-in (begin) and punch-out (end) times.

- Click on the Punch button to highlight it.

Punch mode is now turned on, and the portion of the Session between the begin and end times will be recorded automatically on the record-enabled track on your next recording pass. No other section of the track will be replaced.

- Click on the tape transport's Play button.

- As the existing track plays, monitor (play) your new source signal (your instrument, microphone, etc.). Set the input level (or the source level if you have Pro Tools or Sound Tools II) so that the

replacement signal meter level approximately matches the meter level of the signal on the track.

Important: When you are punching in, you **can** set the *monitor* level of the existing track to a different level than the *monitor* level of the incoming signal. (Remember, **monitor** level is how loud you hear it, while **input** level is how loud it is actually recorded.) When a track is **not record-enabled**, the track's volume fader adjusts the playback (monitor) level of that track. When a track **is record-enabled**, the track's volume fader adjusts the playback (monitor) level of **the incoming signal.** Switch record enable on and off to match these two levels.

• Adjust the relative monitor levels of the other tracks by sliding their volume faders up or down.

• When you are ready to punch into the track, click on the tape transport's Record button, and then on the tape transport's Play button. Both will be highlighted.

DECK II begins playback, and you will hear both the existing track and your new input signal. Remember, however, that *only the track section between the counter's begin and end times will be recorded.* When playback hits the punch begin point, recording will start automatically and you will no longer hear the original audio track. Recording will continue until the punch end point, at which time you will hear the original audio track again. Once you have reached the punch-out point (end), your punch-in record run is complete.

• When you are done, click on the tape transport's Stop button. Next click on the tape transport's Return-to-zero button, and then on the Play button to hear what you recorded.

Important: Remember, DECK II is a non-destructive recorder, so when you punch-in new material, the old material is not deleted. This means you can open the Track window after you have punched-in and view your newly recorded range. If you don't like the new take, you can delete it and stretch the old region to reveal the original take. (See the Visual Waveform Editing chapter of this manual for more informa-

tion). After you have made your final decisions regarding takes, you can automatically delete the unused takes using the Compact Session command on the file menu. **Before you compact your Session, make sure you understand how Compact Session functions. For more information, see the Reference chapter of this manual.**

A Note About 'Disk Too Slow' Messages

If you are running DECK II with multiple slave programs on a single Macintosh, or if your Macintosh or hard disk is slow or older, you may encounter the 'Disk Too Slow' message in DECK II. **This is not the kiss of death for your system.** There are a number of simple adjustments you can make that will generally remedy this problem:

Increase the size of your disk buffers: Often you will get this message because your disk is really a bit slow. To compensate for a slow disk, you can increase the size of your disk buffers. This decreases the number of disk reads that need to be made, thereby decreasing the total number of seeks required. Larger sections of audio are loaded during disk reads, and overall strain on your hard disk is reduced. The only drawback may be a slight increase in the delay between pushing the play button and begin of playback. To increase the size of your disk buffers, choose the Memory & Storage command on the File menu's Preferences submenu. This dialog appears:
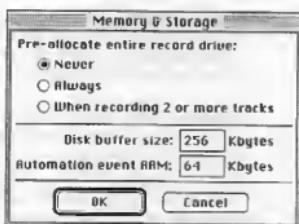
Use this dialog to enter a larger disk buffer size. Try 256K first, then increase it if that doesn't improve disk performance sufficiently. **Remember,** when you increase your disk buffer size, you should also increase the amount of RAM allocated to the DECK II application by **four times the size of the buffer size increase** (there are four disk buffers). For example, if you increase your disk buffer size from 256K to 512K, you should allocate 1000K more RAM to DECK II. (To do this, select the DECK II application in the Finder and choose the Get Info command on the File menu).
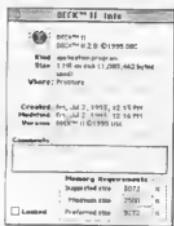
Decrease the update speed setting for background programs: DECK II offers a special 'Update speed during playback' preference available under General on the File menu's Preferences submenu. This preference allows you to set how much time is available for other programs to update in the background behind DECK II audio playback. A setting of '1' allows the background program to update as often as possible. This setting makes it easier to see screen activity in background programs. A setting of '10' prevents background programs from updating during playback, allowing DECK II to monopolize your display. This setting does not affect the performance of the background program at all. It only affects screen drawing. A setting of '5' is suggested. If you are running METRO in the background, and you experience 'Disk Too Slow' messages, you may want to set this to '8' or '10' to decrease the background strain on your Macintosh CPU.

Turn off the 'Stop playback if disk is too slow' preference: This is a particularly useful preference available under **General** on the File menu's Preferences submenu. The **'Stop playback if disk is too slow'** preference allows you to set how carefully DECK II checks to see if your drive is too slow. If you attempt to play four tracks from a very slow drive, DECK may not be able to play them without a small 'hack' or 'skip' in playback. Usually this skip is so subtle, you will not be able to hear it. When this preference is **turned on**, DECK II will put up a warning dialog and immediately stop playback any time disk performance *might* cause a playback skip. When this preference is **turned off**, DECK II will continue to play back, even if a slight skip is possible.

Hint:

If you are mixing live directly to DAT or a mastering medium, then turn this on. It guarantees that audio playback will be supervised and stopped before any skip might occur. If you are simply editing sound and you plan to **mix to disk** (which is the suggested way to use DECK II), then leave this preference turned off. Almost all skips will not be audible, and even if you do hear one, it will not appear in the master file that results from a mix-to-disk.

This concludes the Creating and Recording chapter. For information about specific waveform editing tasks, see the Chapter 5 of this manual. To learn about synchronizing, mixing and mastering, see Chapter 7. For exact information about DECK II's windows and menu commands, see the Reference chapter of the manual.

FIVE

VISUAL WAVEFORM EDITING -
THE TRACK WINDOW

Introduction

This chapter of the DECK II manual focuses on the specific tasks you'll need to understand, in order to get the most out of DECK II's visual waveform editing environment: the Track window. The Track window offers access to the heart of DECK II's editing features. You will use the Track window to slip tracks, arrange audio, redefine regions, place existing audio, create and edit visual automation envelopes, spot sound to picture, bounce tracks, create work tracks and more. The Track window is really where you will find DECK II's workstation power, and although you do not need to use the Track window to record and mix tracks, you will miss most of DECK II's new features if you don't understand how DECK II's Track window works. It is always time consuming to learn a new interface, but the DECK II Track window interface is simple to grasp, and very open-ended in its possible applications. It is not designed for music alone – there are an equal number of tools available for audio post-production and QuickTime sync. Time spent learning the DECK II Track window will be well worth it.

Placing Existing Audio Files and Regions

The simplest task you will generally need to perform involves placing audio files that already exist, and organizing them for playback. In this way, you can think of the Track window as a 'page layout' program for sound. It lets you take any audio file (or region within a file) and stick it anywhere in time. There are an unlimited number of tracks, so there is no limit to the number of tracks you can build. (Although only the top four tracks play, you can always bounce four tracks to one or use virtual mixing, allowing you to create mixes that are hundreds of tracks deep.)

Important: DECK II makes extensive use of the Clipboard, and you will use the Clipboard to add new audio to the Track window. Remember, DECK only uses the Clipboard to keep track of the files you are adding or

editing, it does not put the actual audio data on the Clipboard. This means that you will not need large amounts of RAM to add audio files to the Track window, and it will not take long.

To add existing audio to a track:

• Create a new Session or open an existing Session.

  This will be the Session to which you are adding audio.

• Choose the Add Audio to Clipboard command on the File menu. This dialog appears:
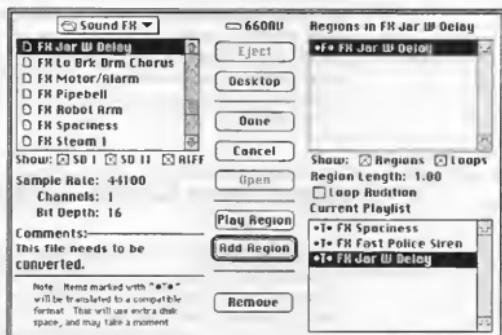
• Use the file selector box in the upper left corner of this dialog to find and select the soundfile you want.

When you select a soundfile, you will see the pertinent information about it, including the sample rate, number of channels and bit depth.

DECK II supports mono and stereo 8- and 16-bit Sound Designer, Sound Designer II, and AIFF soundfiles. If you select a soundfile that is not supported, you will see a message stating "This soundfile cannot be converted" in the comments area. DECK II does not yet allow you to add soundfiles with sample rates other than 11.025, 12, 22.050, 24, 44.1 or 48 kHz.

Note:

QuickTime movies that contain audio at most sample rates can be imported using the Import Movie command on the QuickTime menu (although the best results will be achieved when the QuickTime audio is at 22050 Hz or 11025 Hz). This command makes it possible to bring QuickTime movie audio directly into the DECK II Track window.

- Use the file region box in the upper right corner of this dialog to highlight the desired region within the current soundfile.

Once you select a soundfile in the left-hand selector list, you will see a list of the audio regions and loops that are in that soundfile. An audio region marked with a •F• represents the entire soundfile. Regions marked with •R• are simple audio regions, and those marked with •L• are loops (AIFF files only). You can audition any file, region or loop by selecting it and clicking on the dialog's Play button. You can hear the audio looped by checking the loop audition box.

- To add the highlighted region, click on the dialog's Add Region button.

This will add the selected region to the Current Playlist in the lower right hand corner of the dialog. At any time you can remove items from the current playlist by selecting them and clicking on the Remove button.

- Continue selecting the files, regions and loops you wish to add. Then click on the Done button.

This will add all of the items in the current playlist to the Macintosh Clipboard for pasting into DECK II's Track window. Remember, all files, regions or loops which are not mono or do not match the current

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Session's sample rate and bit depth will be converted to match. This may take some time and disk space, because DECK II is making copies of this data.

After a moment you will be returned to the DECK II Track window.

• **To place one newly added sound at a specific place in time,** click at that time in the Track window waveform area (to put down an insertion point) and choose one of the Paste commands. The regions will be pasted into the track window at that point.

If you are adding **stereo** or more-channel regions, make sure that your insertion point or selection range covers two or more channels. Then when you paste, all regions that contained more than one channel will be pasted into the Track window with all of their channels in phase.

• **To place the newly added sounds on new tracks,** make sure that no insertion point or range is selected, then choose one of the Paste commands.

You can use the Edit menu's Deselect command to make sure nothing is selected. After the paste, you will see one (mono) or two (stereo) new playlists located on tracks 1 (and 2). They will be called "Clipboard 1" (and "Clipboard 2"). All existing audio playlists will be pushed downwards. For example, in the case of the stereo add described above, the playlists formerly loaded on tracks 1 and 2 will now be pushed down to positions 3 and 4. Playlists formerly loaded on tracks 3 and 4 will now be pushed down to the work track area.

• **To place multiple added sounds at different points in time,** open the Regions window. Move the window to a spot where you can see both it and the Track window. Click and hold on the region you wish to spot. The cursor will change to a left arrow. Drag the cursor to the spot where the audio should be and let go of the mouse. You can spot audio exactly by observing the current time in the Track window. Repeat this process until you have placed all audio.

Hint: You can also use the Load Audio File command on the File menu to load an existing Sound Designer II mono audio file directly onto a new

track, but this command offers no real options for file and region importing. **For most tasks, the Add Audio to Clipboard is a much more useful command.** The Load Audio File is most useful for owners of DECK 1.0x. The Load Audio File command offers a one-step solution for loading tracks from DECK 1.0x Sessions directly into DECK II.

Moving and Renaming Track Playlists

The DECK II track window uses track position to determine which playlists will play back. There are four play tracks, which are numbered 1–4 in their Track Label/Drag areas. All other tracks (there is no maximum number) are work tracks, as indicated by the letter "W" which appears in their Track Label/Drag areas. Playlists on work tracks do not play back. In order to play back a playlist that is on a work track, you must move the playlist to a play track. For this reason, it is important that you understand how to change the position of the different tracks.

There are a number of easy solutions for selecting and manipulating tracks on the 'whole track' level.

To move a track playlist from one track to another:

DECK II offers two methods of moving a track playlist from one track to another. The simplest method uses the Playlist Pop-up menu.

- Click and hold on the playlist name of the destination track. You will see a pop-up listing all playlists currently in your Session. Select the new playlist. When you let go of the mouse, the new playlist will appear on that track.

The playlist pop-up functions exactly like the pop-up at the bottom of each mixer module in the Mixer window. You may also change playlist position manually using the following method:

- Click on the track's Label/Drag area to select the track.

The track will be highlighted to indicate that it is selected. When a track is selected in this fashion, any Edit menu command can be executed on the track. When track 1 is selected, for example, it should look something like this:
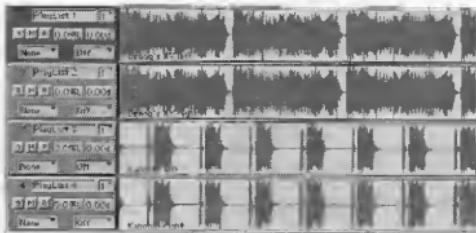
- Click and hold on the Label/Drag area for the selected track. The mouse cursor changes to a left-facing arrow.

- Drag the selected track upward or downward to its new position, then let go of the mouse.

As you drag the track, you will see a bright horizontal line highlighting the destination spot. This line will appear underneath the arrow

cursor between any two existing tracks as you drag the mouse up and down. When you let go of the mouse, the track will be inserted exactly where the highlight line appeared.

Hint: If you are using this method to move tracks from position to position in the Track window, you may find it easier to accomplish your tasks when the tracks are set to 'short' height. Click on the Track Size button to toggle between track display modes.

To cut, copy and paste entire track playlists:

• Click on the track's Label/Drag area to select the track.

The track will be highlighted to indicate that it is selected. When a track is selected in this fashion, any Edit menu command can be executed on the track.

• Choose the Cut or Copy command on the Edit menu.

If you choose **Cut**, the entire track's playlist will be removed and placed on the Clipboard for pasting into another track position. If you choose **Copy**, a copy of the entire track's playlist will be placed on the Clipboard for pasting into another track position.

• Click on any track's Label/Drag area to select the track as the destination.

Track playlists are **never replaced** when you use DECK II's Paste command. The pasted track playlist is always placed on the track below the selected destination track.

To rename a playlist:

• Click on the track's Label/Drag area to select the track.

The track will be highlighted to indicate that it is selected. When a track is selected in this fashion, any Edit menu command can be executed on the track.

- Choose the Rename command on the Edit menu. This dialog will
  appear:

```
┌─────────────────────────────────┐
│  Playlist 1                     │
│                                 │
│        ( OK )  [ Cancel ]       │
└─────────────────────────────────┘
```
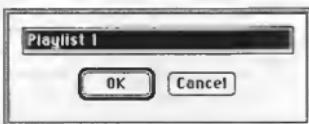
- Type in a new name for the playlist, then click on OK.

The Track window will appear immediately showing the playlist with
the new name.

Shortcut: You can also rename track playlists by holding down the command
                   key and clicking on the Track Playlist pop-up. This method offers a
                   simple way to change the name of the current item in most of DECK
                   II's list pop-ups. The same shortcut works with Location Times and
                   Mixer States in the DECK II Transport window.

Track Window Navigation

Before you can really edit audio regions and waveforms, you will need
a basic understanding of the tools you will use to navigate within the
Track window and configure the waveform display area.

To change the waveform display magnification:

- To magnify (zoom in on) the current waveform display, click on the
  Magnify button:

The waveform display will be stretched outward (to the right) as you
zoom into the left edge of the display. Click on the button again to
zoom in more.

- To **demagnify** (zoom out on) the current waveform display, click on the Demagnify button:

The waveform display will be squeezed inward (to the left) as you zoom out on the left edge of the display. Click on the button again to zoom out more.

Hint: Hold down the command key and click on the Magnify or Demagnify button to zoom all the way in or all the way out, respectively. Use the option key with these buttons to (de)magnify 2X and both the shift and option keys to (de)magnify 4X.

- To auto-zoom to show the only the current selection, first select a range or region.

- Click on the Fit Selection button:

The waveform range or region you had selected is auto-zoomed to fill the display. This is a particularly useful tool for display manipulation when accurate waveform editing is required.

Hint: **Option click** on the Fit Selection button to center the display on the beginning of the selected range or region. **Command click** on the Fit Selection button to center the display on the end of the selected range or region.

To magnify the vertical display of waveforms:

- Click on the up arrow button to magnify low-level signal:

This will only magnify the display of the waveform, not the actual
audio data. If you wish to alter the disk data to increase the actual
level of the audio, use the Normalize command explained in the
Destructive Effects section below.

- Click on the down arrow to return the display to its normal resolu-
tion.

To store view memories:

- Set the waveform display so that you are viewing the range you
desire at the magnification you wish.

- Hold down the command key and click on any of the four View
Memory buttons:

You have now stored the current waveform view on that view
memory.

- To recall the stored view, simply click once on the view memory
button.

This immediately recalls the view you stored on that button. Remem-
ber, view memories are saved with the Session, and will be present the
next time the Session is opened.

Important: The DECK II magnify and Fit Selection tools allow you to zoom in and
out in steps that are smaller than the steps between display resolu-
tions. If you are not paying attention, you may end up with the
display adjusted to an odd resolution. To pop back to the resolution of
your choice, select that resolution on the Axis Resolution pop-up as
described later in this chapter.

To toggle track size, waveform drawing, and text labels:

• Click on the Track Size Button, Waveform Draw Button, or Track Text Button to toggle track size, waveform drawing, or text labels on and off respectively:

The **Track Size** button toggles the waveform display between three display modes. Tall display is best for locating zero points in a waveform, while medium display is best for waveform range or region editing, and short is quite useful for track shuffling. The **Waveform Drawing** button toggles the drawing of waveform data on and off. You will want to have the waveform drawing turned on when you are editing audio ranges, but it is often helpful to turn waveform drawing off if you are recording tracks, or arranging large numbers of regions. (Screen redrawing is faster when the waveforms are not drawn, and overviews for newly-recorded tracks are not built unless Waveform drawing is turned on.) The **Track Text** button allows you to turn the region name labels on and off. Turning them off sometimes helps to 'unclutter' the display when you are zoomed way out.

Recording Directly into the Track Window

DECK II's Track window allows you to record directly into any of the four playback tracks. The process you will follow to accomplish this is quite simple, but in most situations you will also need to look at the DECK II Mixer window VU meters to view the level of the incoming signal.

To record directly into the Track window:

• Make sure you have a DECK II Session open, and that a sound source is hooked up to the audio inputs. To hear what you are recording, you should also hook up the audio outputs to an amplifier with speakers or a headphone amp.

- Click and drag on the Input selector pop-up to the right of the playlist name to select the audio input from which you wish to record.

- Record-enable the track upon which you wish to record by clicking on its R (Record) button. This will turn the R button red.

- Choose the Mixer command on the Windows menu to bring the Mixer window to the front.

    The Track VUs will now be input level VUs. This is how the track should look:

- Begin playback of your source signal. Set the output level of your source so that the track VU meter registers a high signal level, with no clipping. The incoming signal should keep the VU meter as close to the top without turning on the clip light.

Important: If you have an AV machine or an Audiomedia or MediaTime card, you will set the input level by using the Input Level pop-up on the Options menu. If you have any other audio card, you will need to adjust the level of your signal source to the correct volume.

- Adjust the monitor level of the track you're recording by sliding its Mixer window track fader up or down.

  When you have a track record-enabled, the track volume fader adjusts the volume level for monitoring the track. It does not change the record level. (When the track is not record-enabled, the track volume fader adjusts the output level of any audio that is already on the track. This volume can be set to a different level than the input monitor volume, which is useful during punch-in recording.) You should use the track faders to adjust playback volume to your liking, but always make sure that the input level is set so that the channel VU meter registers a high signal level, with no clipping. Now that you have set the level of the incoming signal, you can close the Mixer window and record that same signal again without watching the VU meters.

- Choose the Track command on the Windows menu to bring the Track window to the front.

- When you are ready to record the track, click on the tape transport's Record button, and then on the tape transport's Play button. Both will be highlighted:

As soon as you click on the Play button, DECK II begins recording. DECK II will record until you hit the tape transport's Stop button (or until you run out of hard disk space).

- When you are done recording, click on the tape transport's Stop button.

You have recorded the track directly into the Track window. After a moment, the waveform overview will be built and you will see the new audio. You are now free to rerecord it, punch in on it, record another track, or edit the recorded waveform.

Hint: There is a simple shortcut for punch-in recording (and loop rehearsal) directly from the Track window. To punch-in on a track in the track window, just select the range you wish to re-record, then choose the "Set Punch Time From" command on the Option menu's Selection Tools submenu (or hold down the command key and press R). Your selected range is automatically transferred to the Transport window. To punch-record the range, just click on the Punch mode icon in the Transport window, and record the track.

Basic Range Mode and Object Mode Editing

DECK II's Track window has two fundamental editing modes: Range mode and Object mode. Range mode allows you to select waveform ranges by dragging the mouse across those ranges. Selected waveform ranges can be edited in a number of ways. Most of the edits you would perform in Range mode pertain to defining pieces of an audio track as regions, cutting and pasting small portions of longer audio regions, and fading or crossfading sections of audio regions. Object mode is designed for wholesale arrangement of existing regions, and general trimming and placement functions. On a simple level you can think of Range mode like Macintosh 'painting' and Object mode like Macintosh 'drawing.' Range mode lets you grab any piece of any waveform on any track, and slice or copy that piece to create or alter a region. Object mode lets you select groups of regions and move those

regions for the purposes of songwriting, effects spotting, or general organization. You can't select anything smaller than one region in Object mode.

Range and Object mode are at the heart of the DECK II Track window editing functions. All editing you perform will be done in one of these modes. Here are basic instructions for using the two modes. Don't forget to review the key command information immediately following this section, because key commands play a major role in expanding the power of the DECK II edit modes.

To select and edit a waveform range:

- Choose the Track command on the Windows menu to open the Track window.

- Click on the Mode Selection icon to make sure you are in Range mode. It should look like this:

The Mode Selection icon toggles between Object mode (the hand) and Range mode (the selected waveform).

• Click and drag the mouse over any waveform area. Then let go of the mouse button. Your Track window should look something like this:

You have now selected a waveform range. Note that it can cover any number of tracks and any amount of time. You can now edit the selected range in a number of ways. If you click and drag anywhere within the selection, you can 'tear off' the selected range and place it on any track at any time. You can accomplish the same thing by choosing the Cut command on the Edit menu, and then placing an insertion point anywhere in the Track window to paste the selection. You can also delete the selected range simply by hitting the Delete key on your Macintosh keyboard. If you just want to define the selected range as a new audio region (for later arrangement in Object mode), you can select the Slice command on the Edit menu. This will create new regions out of the selected range 'in place,' so no overall change in timing or audio placement occurs. You can also perform destructive effects on audio ranges.

Hint: There are a number of key commands that greatly enhance the Range mode 'drag-edit' functions. Read about them in the next section.

To object-select and edit a region:

- Choose the Track command on the Windows menu to open the Track window.

- Click on the Mode Selection icon to make sure you are in **Object** mode. It should look like this:

The Mode Selection icon toggles between Object mode (the hand) and Range mode (the selected waveform).

- Click the mouse on any single waveform region. The region upon which you clicked in the Track window should look something like this:
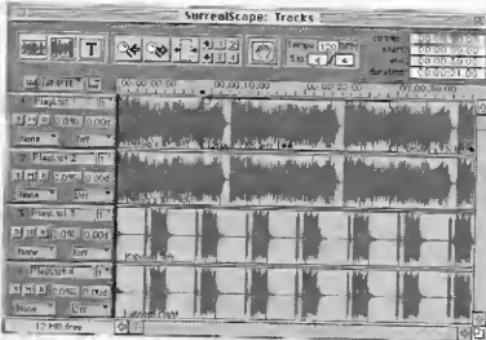
You have now selected a waveform **region**. You can hold down the shift key and click on another region to add that region to the selection. Note that DECK II allows you to have **discontiguous** (non-touching) regions selected, which can be very useful for 'checkerboard-style' editing and destructive processing. You can now edit the selected

region in a number of ways. If you click and drag anywhere within the region, you can drag and place it on any track at any time. You can accomplish the same thing by choosing the Cut command on the Edit menu, and then placing an insertion point anywhere in the Track window to paste the selection. You can also delete the selected range simply by hitting the Delete key on your Macintosh keyboard. You can also use the Edit menu's Copy and Paste commands to paste multiple copies of the region end-to-end (or in any other desired arrangement). You can also execute destructive effects on all of the selected regions. To do so, see the Destructive Effects submenu on the Process menu.

Hint:

Note that when you move a region, the data indicator boxes in the upper right corner of the Track window update to show you the duration of the region and the start, stop, and current (mouse) positions. Use these numbers to aid in placing audio at the desired frame, beat or second. There are also a number of key commands that greatly enhance the Object mode 'drag-edit' functions. Read about them in the next section.

Important Key Commands for Advanced Range and Object Mode Editing

DECK II was designed to allow you to make a vast number of different edits without changing endlessly from one edit mode to the next. Most of these types of edits take place with the help of 'modifier keys' like the **command, option** and **control** (ctrl) keys. These keys make it possible to drag copies; 'stick' regions to previous regions (or the earliest possible time); place regions while shuffling subsequent regions later in time; expand, contract and rotate the selection; and many other functions. **Take the time to learn these functions.** If you plan to edit substantial amounts of audio in DECK II, you will need these keys.

Space bar:

Start and stop playback.

Shift+space bar:

Audition the selection only.

Tilde key (`):	Switch between Object and Range mode.
Shift+drag:	When dragging regions, shift **after beginning** to drag to constrain the region to its original start time. This is very useful for editing regions and keeping them in phase with their original positions.
Option+drag:	When dragging regions, drag a new copy and leave the original.
Command+drag:	When dragging regions, hold down the command key before you let go to 'stick' the region onto the end of the previous region on the track (shuffle).
Control+drag:	When dragging regions, hold down the control key before you let go to slide all regions after the current region later in time by exactly the length of the current region (shove).
Arrow keys:	In Object mode, these keys shift the current selection in the direction of the arrow by one region. In Range mode, these keys shift the current selection in the direction of the arrow by one grid unit.
Shift+arrow keys:	In Range mode, hold down the shift key and press the right and left arrows to expand the selected range later or earlier by one grid unit.
Command +arrow keys:	Physically move the selected object or range left one unit, right one unit, up one track or down one track. This is very useful for editing regions and keeping them in phase with their original positions.
Command+option +arrow keys:	Create a copy of the selected object or range one unit to the left, one unit to the right, one track above or one track below.
Command+control +arrow keys:	Physically move the selected object or range left one unit, right one unit, up one track or down one track AND push all later regions on the destination track later by the length of the region or edit.
+ key:	Nudge the selected range or object later by one SMPTE frame.
- key:	Nudge the selected range or object earlier by one SMPTE frame.

Of course, most other standard Macintosh editing key combinations also apply, and most of the above key commands can be used in any combination.

Selecting Track Window Time Units and Managing the Grid

DECK II allows you to adjust any Session to show you all time and waveforms in seconds, samples, SMPTE frames, or in bars and beats. You are free to set these units based on the type of editing you plan to do, and you can reset them at any time without worrying about altering the timing of your tracks. The different units can be very helpful, and it is important to understand them, because many Track window edit functions are unit-oriented. One major reason for this is the Track window grid, which is extremely useful for many arrangement tasks.

DECK II's smart grid is like an invisible template that automatically pops your edits to the nearest applicable unit. It's called a 'smart grid' because it automatically adjusts to the most reasonable units for the current display resolution. For example, if you have chosen Seconds as your units, the Track window grid can automatically switch between minutes, 10 seconds, 1 second, centiseconds, milliseconds and sample, based on how far in you zoom. The DECK II grid is a particularly important tool for musical arrangement, because it allows you to do 'drum machine-style' editing of audio regions, and edit general audio regions to specific tempos. Although you are free to turn off the grid at any time, it will be worth your while to learn its basic functions.

To select time units for viewing the Session:

• Choose the Track command on the Windows menu.

This brings the Track window to the front.

• Click and hold on the Axis Units pop-up near the top left of the
  Track window. It will look something like this:

Drag to select the units of your choice. Then let go of the mouse
button to make your selection. You have now chosen and set the time
units for the current Session. These units will be saved as a part of the
Session, and when the Session is next opened, it will show all time in
these units. Remember, you can change your chosen units at any time
without affecting the placement of any audio regions.

Note:

If you are working in Beat mode, there is a circumstance in which you
may wish to have audio regions stick to their bar and beat placement
when tempo is changed. If you are using DECK II as a virtual drum
machine (playing individual drum sounds back as regions), then you
will often want to make sure that any tempo changes will adjust audio
region placement to **make sure that the regions still start at their
original bar and beat locations**. In this situation, changing tempo will
alter where bar and beat boundaries occur in relation to real-time, and
bar/beat start times are considered to be 'relative times' rather than
'absolute times.' DECK offers a special preference for this type of
editing. If you wish the regions to stick to their bar and beat locations
whenever tempo is changed (in Beat mode), then see the **Change
region start times with BPM change** preference (under General
preferences on the File menu's Preferences submenu). When this
option is turned on, tempo changes in **Beat mode** will adjust the
placement of audio regions so that they retain their bar and beat
locations. See Chapter 7 of this manual for more information.

To turn the Grid on and off:

• Choose the Snap to Grid command on the Options menu.

This command allows you to toggle the grid on and off. Note also that you can toggle the grid on and off by clicking on the Grid button directly to the left of the Axis Units pop-up:

Click on this button again to turn the grid back on.

To jump to a specific display resolution:

• Choose the Track command on the Windows menu.

This brings the Track window to the front.

• Click and hold on the Axis Resolution pop-up to the right of the Axis Units pop-up. It will look something like this:
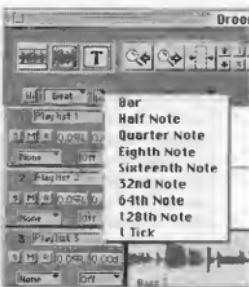
Drag to select the resolution of your choice. Then let go of the mouse button to make your selection. The Track window waveform area will immediately adjust to the resolution you selected. This is the fastest and most accurate way to set the waveform display area to show the resolution you want. You can now proceed with any edits that should be based on the current units. Remember, you can use any of the four Track window view memories to store your current waveform view.

Note:

When the resolution is changed, the waveform area is zoomed in or out at its left side. This may pop the display to an area that no longer shows the current selection (or shows its center, but makes it impossible to see the start or end of the selection). Remember, regardless of resolution, you can immediately center the waveform display on the beginning or end of the current selection. To do so, use the **Position at Beginning** (command+[) or **Position at End** (command+]) commands on the Option menu's Selection Tools submenu.

Important:

The DECK II magnify (zoom) tools allow you to zoom in and out in steps that are smaller than the steps between display resolutions. If you are not paying attention, you may end up with the display adjusted to an odd resolution. To pop back to the resolution of your choice, select that resolution on the Axis Resolution pop-up as described above.

Hint:

To locate to a specific point in the Session, simply click on the time axis label to jump to that point.

Redefining Regions

Audio regions are the building block of any DECK Session, and the skills involved in creating and defining regions are some of the most important ones to develop. As described earlier in this chapter, a region can be created in a number of simple ways, from simply 'tearing off' a waveform range to 'slicing' the range on place. Once you have created an audio region, there is a very simple method to edit the start and end points of that region. It requires no special mode, and can be done very quickly.

To resize an audio region:

• Choose the Track command on the Windows menu to open the Track window.

• Click on the Mode Selection icon to make sure you are in **Object** mode. It should look like this:

• Click the mouse on any single waveform region. The region upon which you clicked in the Track window should look something like this:
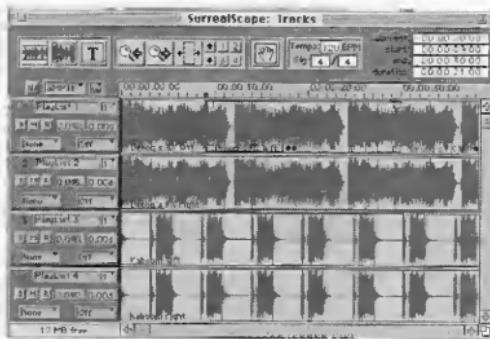
You have now selected the region.

- To resize the region, click and hold on any of the four drag tabs to increase or decrease the size of the region:
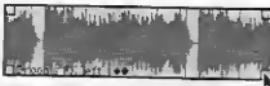
While you do this, a square marquis highlights to show you the size of the region as you change it. You can look at the numeric display in the upper right corner of Track window to see the current size of the region. Remember, if you are editing region size with the grid turned on, the size will automatically be constrained to the grid.

Note:
Remember, an audio region is like a tiny window into the source soundfile. You can adjust that window to show any part of the sound-file, but there is no way to make an audio region reveal more data than is contained in the source soundfile. When you drag a region tab to resize the region, but the region refuses to grow any larger, **this means you have reached the end of the source soundfile data.**

Using Play Tracks and Work Tracks

While DECK II looks like a simple four-track audio recorder and editor, the concept of 'virtual tracks' allows you to create mixes that are many layers deep without bouncing tracks. You can think of it like this: DECK allows you to record and arrange an unlimited number of tracks, but at any time you can choose which four of those tracks will play. All tracks other than the top four 'play tracks' in the Track window are called **Work Tracks**. Work tracks do not play back - but they can be mixed together with the play tracks if you have the Virtual Mix command enabled. Work Tracks store all information about a playlist, including automation. If you do not have the Virtual Mix command enabled, you can use work tracks as a visual database of

potential playback tracks, arrangements, and premix sources. Work
tracks are one of the features that make DECK II powerful.

To move tracks from Play tracks to Work tracks and back:

- Click and hold on the playlist name of the destination track. You
will see a pop-up listing all playlists currently in your Session. Select
the new playlist. When you let go of the mouse, the new playlist and
all associated information will appear on that track.

Note: You can also move tracks manually as described above in the Moving
Playlists section.

Fast Cueing and Auditioning

The DECK II Track window offers a number of shortcut features you
can use to audition specific selections and 'autocue' a range for loop
evaluation. Here's how they work:

To audition any waveform range or region:

- Open the Track window. Then select the waveform range (Range
mode) or region (Object mode) you wish to audition.

    You can select a range or regions on multiple tracks, if you wish.

- Choose the Audition command on the Process menu (or hold down
the command key and press T, or the shift key and press the space
bar).

    Your selected range or region(s) will play back. All audio will be
    center panned, and automation will be ignored. Note that the
    Audition command **will play back work track audio,** if you have
    that audio selected.

Hint: You can set DECK II's Audition command to loop the selected range or
region automatically, or to play the selection a single time. (DECK can

only loop ranges and regions that are longer than 0.5 seconds.) To configure the Audition function, see the Loop Audition item in the General preferences (available on the File menu's Preferences submenu).

To 'autocue' a Session range for loop evaluation:

- Open the Track window. Then select the waveform range or regions that constitute the portion of the Session you wish to hear in loop playback.

  Regardless of which tracks contain the selection, all tracks will play back when you begin the cue loop.

- Press the 'C' key on your Macintosh keyboard.

  The current selection range is automatically transferred to the Transport window's begin and end times, and Loop mode is turned on. You are now ready to hear the loop.

- Press the Play button in the Transport window or the space bar on your Macintosh keyboard to hear the loop.

The loop will play back repeatedly until you press the Stop button in the Transport window or press the space bar on your Macintosh keyboard. To turn off the loop, click on the Loop mode icon in Transport window (or press Option+C).

Constructive Fades and Crossfades

The DECK II Track window offers all of the standard constructive fade and crossfade functions you would expect in an audio workstation. Unlike automation envelopes (which physically control the volume or pan faders) fades and crossfades create new audio data, and place that

audio data on top of the selected range, **without deleting the original audio data.** Crossfades in particular are extremely important sound design tools, because they let you overlap two audio regions on the same track, and edit the transition between the two regions so that the first one fades out as the second one fades in. Normally, this would require two tracks, but crossfades make it possible to accomplish this on a single track. This is the kind of range selection you might make to generate a crossfade between two regions:

If you executed a crossfade in this selection, you would get the following results: **Region 1** will begin fading out at the beginning of the selected range, and will be fully faded by the end of the selected range. **Region 2** will begin fading in at the beginning of the selected range, and will be at full volume by the end of the selected range. The result of this crossfade would look like this:

Fades and crossfades are usually based on the current selection, but DECK offers a number of different fade in and fade out shapes, which also have a great effect on the outcome of any fade or crossfade. Here is a list of the different shapes, some basic information about their uses, and some suggestions for combining them.

Important:

As you can see above, crossfades are based on audio data that is **after the end of region 1** and other data that is **before the beginning of region 2** in the source soundfiles. If you attempt to create a crossfade using regions which reference soundfiles that contain **no data** after the end of region 1 or before the beginning of region 2, DECK will warn you that there is no data. You will still be allowed to create the crossfade, but DECK will use **silence** as the surrogate data.

Fade Out Shapes

This curve keeps Region 1 at full volume throughout the crossfade and then immediately fades it out at the very end of the selection.

This curve fades out Region 1 relatively slowly, keeping the amplitude fairly high. Towards the end of the crossfade, the amplitude drops off sharply.

This curve fades out Region 1 slightly faster, with the amplitude slightly lower than the previous envelope. This curve is the same as the "equal power" curve found in Sound Designer II.

This envelope fades out Region 1 with a linear fade curve. It creates a smooth, even fade out. It is the default curve.

This curve fades out the amplitude of Region 1 relatively quickly at the beginning of the crossfade.

This curve drops the amplitude of Region 1 even more quickly at the beginning of the crossfade.

This envelope silences Region 1 at the beginning of the crossfade.

Fade In Shapes

This curve brings up Region 2 at full volume immediately at the very beginning of the crossfade and keeps it there throughout the crossfade.

This curve fades in Region 2 quickly in the beginning, reaching full amplitude fairly early in the crossfade.

This curve fades in Region 2 at a moderately fast rate with slightly lower overall amplitude.

This curve fades in Region 2 with a linear fade curve. It is slightly slower, with an even amplitude throughout the crossfade. This is the default envelope.

This curve fades in Region 2 slowly at the beginning of the crossfade.

This curve fades in Region 2 even more slowly than the previous curve.

This curve silences Region 2 until the end of the crossfade.

Possible Envelope Combinations:

Here are some combinations of Fade Out and Fade In envelopes that you may wish to try.
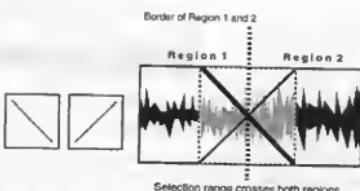
Linear Crossfade. A good general purpose crossfade with a smooth, even transition between Region 1 and Region 2. If volume drops across the center of the crossfade, try the equal power crossfade.

Equal Power crossfade. A good general purpose crossfade, useful in cases where a linear crossfade seems to create an overall drop in volume across the splice point.

Overlap Fade. This combination of curves keeps both regions at full amplitude throughout the crossfade: Region 2 "jumps in" at the beginning and Region 1 "jumps out" at the end.

 (Selection same as above)

Silence. Choosing these two curves will create silence for the duration of the crossfade. This combination is not particularly useful for most applications.

Border of Region 1 and 2
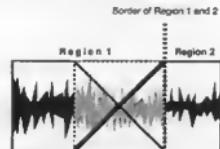
Region 1   Region 2

Selection range extends just up to beginning of Region 2

Linear Pre-crossfade. This combination of curves creates a crossfade *before* the splice point. This will let you maintain the amplitude of the very beginning of Region 2 instead of fading across it. This is useful, for example, if there is a strong percussive downbeat at the beginning of Region 2, that you want to retain.

Border of Region 1 and 2
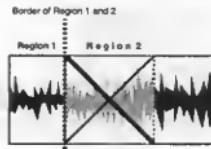
Region 1   Region 2

Selection range begins just after end of Region 1

Linear Post-crossfade. This combination generates the crossfade *after* the splice point. It's useful if you want to maintain the amplitude of Region 1 until it's very end; in cases where want to keep a strong upbeat that occurs at the end of Region 1, for example.

To fade or crossfade the current selection:

• Open the Track window and select the waveform range you wish to fade or crossfade.

This range **must** cross at least one region boundary. If it only crosses over the **beginning** of a region, a **fade in** is generated. If it only crosses over the **end** of a region, a **fade out** is generated. If it only crosses over the border between two touching regions, a **crossfade** in is generated.

Note: Remember, fades in always begin at the beginning of the region and fades out always end at the end of the region. This is true even when you select from well before the beginning or up to well after the end. This makes it possible to generate fades in and fades out without requiring that you select exactly from the start or to the end.

• Choose the Fade Selection command on the Process menu.

After a few moments, your crossfade will be complete and you will see it in the Track window. Remember, if there is no audio data in the source file after the end of region 1 or before the beginning of region 2, DECK will warn you that no data is available. However, DECK will allow you to execute the fade anyway, using silence as the missing crossfade source data.

To set the default fade/crossfade:

• Choose the Set Default Fade command on the Process menu. This dialog appears:

Crossfade Out Shapes: Before Splice:
                         260   mS

Crossfade In Shapes:
                         260   mS
                         After Splice:

        OK   Cancel
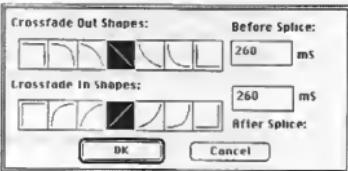
The **default fade** is the basic fade in and fade out shapes (along with default durations) that are used when you choose the Fade Selection command or the Default Fade command. The Fade Selection command always uses the default fade curves, but creates the fade or crossfade according to the **current waveform selection.** The Default Fade command always executes the fade or crossfade using the default fade shapes **and the default fade durations.** This is a very useful command when you want to create tiny 'smoothing' fades or crossfades, but you don't want to zoom all the way in to select a tiny range. The Default Fade command lets you make large waveform selections that are capable of creating very subtle fades. Whenever you want to create a fade or crossfade that doesn't use the default fade shapes, use the Custom Fade command. This command works just like the Fade Selection command, except it always prompts you to choose your fade shapes before it creates the fade.

• Set your fade in and fade out shapes, and enter time durations that will be used by the Default Fade command. Then click on the OK button.

You have now set your default fade information. Remember, DECK II allows you to execute fades and crossfades on **any number of regions** at one time. When you select multiple regions and choose the Default Fade command, all selected regions are faded or crossfaded using the default fade shapes and durations. When you select multiple regions and choose the Fade Selection command, all selected regions are faded or crossfaded using the default fade shapes and their whole duration as the fade durations.

To execute the default fade/crossfade:

• Make sure you have set your default fade information as described above.

• Open the Track window and select the waveform range you wish to fade or crossfade (Range mode) or any region or regions (Object mode) you wish to fade or crossfade.

• Choose the Default Fade command on the Process menu.

If you have a great number of regions selected, this process may take a while. After a few moments, the DECK II track window will reappear and all of your fades and crossfades will be in place.

Hint:

If you are editing music, dialog, or effects, you can use the Default Fade command as an 'auto pop-filter' for correcting the clicks and DC offset you may have across region boundaries. To do this, set the default fade shapes to equal power and the default fade durations to a short period (60 ms, for example). Then select all regions and choose the Default Fade command. All regions will be faded in, faded out and/or crossfaded, guaranteeing you that no region transitions will be abrupt.

To create a custom fade or crossfade:

• Open the Track window and select the waveform range you wish to fade or crossfade.

This range **must** cross at least one region boundary. If it only crosses over the **beginning** of a region, a fade in is generated. If it only crosses over the **end** of a region, a **fade out** is generated. If it only crosses over the border between two touching regions, a **crossfade in** is generated.

Note:

Remember, fades in always begin at the beginning of the region and fades out always end at the end of the region. This is true even when

you select from well before the beginning or up to well after the end. This makes it possible to generate fades in and fades out without requiring that you select exactly from the start or to the end.

• Choose the Custom Fade command on the Process menu. This dialog appears:
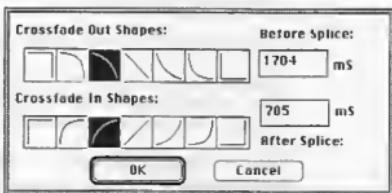
• Choose your fade out shape and fade in shape, then click on the OK button.

After a few moments, your crossfade will be complete and you will see it in the Track window. Remember, if there is no audio data in the source file after the end of region 1 or before the beginning of region 2, DECK will warn you that no data is available. However, DECK will allow you to execute the fade anyway, using silence as the missing crossfade source data.

Note: If you have selected a waveform range that only covers a region beginning or a region end, you will see only one set of fade shapes, rather than two, because you are executing a fade, not a crossfade.

To delete crossfades:

• Open the Track window and select a waveform range that touches any crossfade or regions that contain any crossfades.

• Choose the Delete Fade command on the Process menu.

All fades in any regions touched by the current selection will be deleted. Note that fades and crossfades are small audio files that are generated automatically by DECK and placed in the current Session's crossfades folder. When you delete fades, they will be deleted from your hard disk, however the crossfades are not physically deleted until you save the current Session. When you do so, the disk space occupied by the deleted fades will become available.

Note: When you move regions that are connected by a crossfade, that crossfade will be deleted automatically. Any crossfade is related specifically to the two regions it bridges. The crossfade loses all meaning when the regions are separated.

Hint: As mentioned above, fades and crossfades are generated by DECK from the original source soundfiles. DECK always keeps track of the source soundfiles, and can recreate the crossfades automatically if you delete any of them from your drive. If you ever want to free up disk space consumed by a Session's Crossfades folder, you can simply throw that folder away. The crossfades will be rebuilt automatically when you next open the Session.

WARNING: When you are dealing with crossfades, you must pay special attention to your use of the Compact Session and Compact Audio commands. Both of these commands offer an adjustment called "Handle Size," which allows you to choose how much source audio **before each region's start and after each region's end** will be retained when the source soundfiles are compacted. It is possible to compact a Session or soundfile with smaller handles than you would need to recreate Session crossfades. (Remember, crossfades are built from the sound data before the beginning and after the end of the regions.) Compacting with such a small handle size **will not alter your current crossfades.** However, if you delete crossfades or perform edits that delete crossfades after you have compacted with a small handle size, there may not be enough data to recreate the deleted crossfades.

Destructive Signal Processing

DECK II is primarily a digital recorder, arranger and mixer, and as such it concentrates on non-destructive creation and editing of audio tracks. DECK II offers you many ways to alter the overall level and arrangement of a track without changing the actual hard disk data that makes up that track. However, there are certain cases where a producer might want to change the actual audio data in destructive manner.

If you have recorded a voiceover, for example, and the take is perfect, but the overall level is slightly low (the waveform seems a bit 'short'), you would definitely want to increase the level of the track to its maximum.

For this reason (and other similar purposes), DECK II offers a number of constructive/destructive signal processing. Three processes are available under Destructive Effects on the Process menu: Normalize, Reverse, and Invert. The **Normalize** function looks at an audio region (or group of regions) and automatically adjusts amplitude (volume) to the maximum allowable level. This allows you to bring up low-level signals to a reasonable level, which uses all of the amplitude resolution available on your system. The **Group Normalize** command functions in the same manner, except that it finds the peak over a group of regions and adjusts each region the same amount. Reverse does what you would expect: It takes the selected audio region (or group of regions) and turns them around so they are backwards. This is quite useful for specialty effects and 'pre-processing' effects (pre-echo, etc.). **Invert** automatically flips the audio region (or group of regions) upside-down, which does not alter the sound of the region(s), but can be very useful for looping and general sound design tasks. The **Duplicate** command will duplicate the range or region(s). For more specific information about how these process work, see the Destructive Signal Processing information at the end of the Reference chapter if this manual.

Important: DECK II allows you to perform all destructive processes destructively or constructively. Whenever you perform a destructive effect, DECK II

will ask you if the process should be executed on a copy. Signal processing *permanently changes audio data*, and it can't be undone, so keep backup files and use destructive processing with care.

To normalize, reverse, or invert a region or group of region:

- Make sure that the Track window is open and that you have located the region or regions you plan to normalize, reverse or invert.

- Select the range or region(s) you wish to process.

- Choose the desired command from the Options menu's Destructive Effects submenu. The following dialog appears:
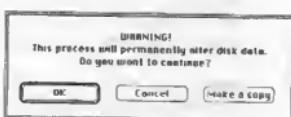
This dialog gives you the choice of processing the original source data or creating a copy and processing the copy. Whenever possible, it is better to make a copy, because this leaves the original data untouched. Remember, if you do choose to process the original, **all instances of that original that are present in the current Session will also be altered.** This is true because they are just references to the same audio data. When you choose the Make a Copy option, you are creating a new copy of the original, and hence the two copies are no longer related.

Hint: Double-click on a track (in the Track Label/Drag area) to select all of the audio on that track (for Destructive Effects processing, for example).

- Click on the button that represents your processing choice. The **Make a Copy** option is recommended.

After a few moments the Track window will reappear and your processed audio will be present. If you chose Make a Copy, the copy has been placed in the position of the original data region. Remember, that original region has not been altered.

Visual Automation Envelopes

The control of volume and movement within the stereo image over time is a very important concept in the audio world. This type of control is the essence of a 'mix.' DECK II allows you to control the volume or pan of any playback track in real-time, and also makes it possible for you to record volume and pan fader motion as you perform it. This 'live performance' idea is very traditional in the audio, and it is one way to automate a mix. This method is explained at length in Chapter 6 of this manual.

With the dawn of the digital audio workstation, many other methods for creating automated mixes have surfaced. The most interesting and powerful of these is the simple visual editing of a line graph (envelope) describing the current position of a control. DECK II allows you to create and edit all automation data in this fashion.

For example, assume you had a region of audio and you wanted it to come in loud, decrease in volume for about half its duration, and then increase slowly back to full volume. In the analog world you would play back your tape deck and use your automated mixing board to record yourself making the physical fader motion. In DECK II, you could simply open up the Track window, find the audio region, and create this volume envelope:
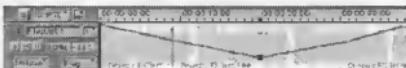
The volume in this illustration is controlled (and indicated) by the thick horizontal line. The lower the line goes, the lower the volume – the top of the track is full volume and the bottom is no volume. If you

look closely, you will see a number of break points in the line where the angle of the line changes. Creating these points (which are automatically connected by lines) is the simplest method you can use to automate a mix. Adding and editing these points allows you to alter the mix in very exact ways. And these automation envelopes can be edited using the same basic Track window functions you use to edit the waveforms.

To create an automation envelope:

- Open the Track window and make sure you are in Object mode.

- Use the Track Automation View pop-up to choose the type of automation envelope you plan to create or edit. (Note that the Automation Status pop-up automatically pops to the 'Play' position, showing that automation is set to play on that track).

The track audio data will dim to light gray which indicates that you cannot edit audio data at the same time as automation. When you have the Track Automation View pop-up set to **None**, then you will be viewing and editing only normal audio waveform data in the waveform area. When the pop-up is set to **Volume**, waveform data will still be shown, but only volume envelopes can be created and edited on the track. In this situation up is full volume and down is no volume. When the pop-up is set to **Pan**, waveform data will still be shown, but only stereo pan envelopes can be created and edited on the track. In this situation up is left channel and down is right channel.

Shortcut: You can set all Track Automation View pop-ups and Automation Status pop-ups to the same setting by option-clicking on that pop-up.

Hint: You can view the exact setting of any volume or pan envelope break point by looking at the level or pan indicator on that track as you move the point. The exact current value will be shown as you adjust any point.

- To create an automation point, hold down the command key and click the mouse at that point.

As you do so, an automation break point appears, along with the associated flat automation line. You have now set a single level setting.

- Continue command-clicking anywhere over the waveform to create more automation points and develop the general envelope shape you wish. To insert a break point with the same vertical value as the previous, hold down the control and command keys and click in the new location.

At any time you can play back the audio using the Transport window controls (or the space bar) to hear the new automation. If you open the Mixer window, you can also see the new automation moves.

- To **adjust a break point**, just click on the point and drag it to a new position. To constrain the time, hold down the shift key while dragging.

- To **delete a break point**, hold down the option key and click on that point.

- When you are done, you can set the Track Automation View pop-up to None to hide the automation envelope.

You can now continue editing audio waveform ranges and regions, if you wish. As long as the Automation Status pop-up is set to the 'Play' position, all automation on the track will play back.

To edit automation envelopes:

• Use the Track Automation View pop-up to choose the type of automation envelope you plan to edit.

You will immediately see the envelope you wish to edit.

• To adjust a break point, just click on the point and drag it to a new position.

• To delete a break point, hold down the option key and click on that point.

• To edit automation envelope ranges, drag to select groups of breakpoints and shift them by holding down the Command key and pressing the arrow keys. Or click on the Edit Mode button to switch the Track window to Range mode. Select any automation envelope range and edit it as if it were a waveform.

All of the standard copy and paste commands will function just as they do with audio data. Of particular interest is the fact that you can also use the Track window range and region dragging functions and arrow key manipulations to drag, nudge and copy automation ranges on a track, or between tracks. For a list of all automation shortcuts, see the end of the Track window section of the Reference chapter.

To mute or delete automation envelopes:

• Choose the track upon which you wish to mute or delete automation.

• Click and hold on that track's Automation Status pop-up. It should look like this:

- To mute all automation on that track, choose the **Off** command. Then let go of the mouse.

This mutes all of the automation on the current track. That automation is not deleted, it is simply turned off. To turn it back on, just set the track's Automation Status pop-up to **Play**.

- To delete automation on that track, choose the **Erase Volume, Erase Pan** or **Erase All** command. Then let go of the mouse.

The automation type you choose will be permanently deleted from the track.

Note: At any time you can use a track's Automation View pop-up to show or hide automation envelopes on that track. Even when you have hidden the current automation envelopes, the functions on the Automation Status pop-up (play, off, erase, etc.) will still function. You do not need to **see** an automation envelope to have it play.

Note: You **cannot** edit audio regions on a track when that track is set to view pan or volume automation envelopes. To edit audio, set the track's Automation Status pop-up back to 'None."

Bouncing Tracks to the Clipboard

Bouncing is the process of creating a submix of multiple playback
tracks in order to free up those tracks so you can record more tracks.
By recording multiple tracks and bouncing them down, you can create
finished mixes in DECK II that are hundreds of tracks deep. (The ideas
behind this process are explained at length in Chapter 3 of this
manual.) Many people also use the bounce process for basic sound
design tasks. By arranging a number of audio regions with automa-
tion, and then bouncing to the Clipboard, you have a one-step solution
for creating mono and stereo soundfiles for loading to samplers or
playback from within DECK.

DECK II makes the process of bouncing very simple and visual. Here's
how it works:

To bounce tracks:

• Open the Session that contains the tracks or regions you wish to
  bounce.

• Bring the Track window to the front by choosing the Tracks com-
  mand on the Windows menu.

• Switch to Range mode by clicking on the mode button:

• Drag to select the **destination range** for your bounced track(s). Your
  screen should look something like this:

Important:

When you bounce in DECK II, **all four or eight playback tracks are always included in the bounce.** For this reason, it really doesn't matter upon which track you choose to select the range. Because of this, you can use the shortcut of selecting the **destination** range instead of the source range. This will return you to the Track window after the bounce is complete, and require only that you choose the **Paste At** command to finish the bounce and paste the new audio at the correct point in time. Remember, you will want to select two destination tracks if you are bouncing to stereo clipboard.

- Choose the **Bounce All to Mono Clipboard** or **Bounce All to Stereo Clipboard** command on the Process menu to execute the bounce. This progress dialog will appear:

When the bounce is complete, you will be returned to the Track window, and your originally-selected range will still be selected.

• Choose the **Paste At** command on the Edit menu to paste the newly-bounced region at the correct place in time. The Track window should now look something like this:

Important: You have now completed the bounce. This new region contains a mix of all of the audio that was set to play in the selected range. **All volume levels, pan settings and automation envelopes are used to** create the bounced file, so it will sound exactly like the original source tracks. You are now free to delete the regions that were used to create the bounce. (In the case of this example, that would be the regions on tracks 1 and 2.) Or, you can simply move the tracks used as source for the bounce down to the Work Track area, where they will not play back. This is the best option, because it allows you to go back to your original source tracks if you desire.

Bounce always bounces all of the play tracks in the selected time range, regardless of which track contains the selection. If you want to make sure that certain tracks are not used as source for a bounce, **mute those tracks**. Mute and solo are taken into account when you bounce to the clipboard.

Note:
You may not need to bounce tracks if you are using the Virtual Mix command. See Chapter 7 of this manual for more information about mixing.

Understanding the Compact Session Command

The Compact Session command is one of the most important commands available in DECK. Because DECK II is a constructive recorder, **audio data is never deleted when new audio is recorder**. This is a very positive fact, because it means that no recording or editing process actually changes, damages or deletes the original source files, so you can always go back to previous takes and versions. The only negative side effect of this characteristic is that unused takes and throw-away regions stay on your hard disk, even after you stop using them. If, for example, you record three voiceover takes and decide to keep the second take, **takes 1 and 3 remain on your drive** even after you remove them from the Session. To permanently delete all unused audio associated with the current Session, you will use the Compact Session command.

Compact Session automatically compacts all of the audio files in the Session's Audio Files folder which are used in the current Session. This is the command you will always use to get rid of unused audio data (junk takes or unused solos, for example) in all soundfiles associated with the Session.

Files are compacted in the following way: DECK II looks at the list of audio regions and loops in each audio file. It then looks through the audio data in each file, and finds all audio data that is **not used in any region**. After the unused audio has been found, it is permanently deleted from the drive, and all region definitions are updated.

Important: Compaction is a destructive process, so make sure you understand what you're doing before you use it! It is particularly important that you understand the **Always Save Regions when Session is Saved** and **Rewrite Regions** preferences in the DECK II General Preferences dialog. These preferences have strong effects on the compaction process. Make sure to read about those preferences **before** you compact audio files or Sessions.

Important: Compact Session only compacts audio files located in the current Session's Audio Files folder. It will not compact audio files located elsewhere on the drive, or on other drives. This safety valve has been built into DECK II to prevent the accidental compaction of soundfiles in a central sound effects library, or of soundfiles used in multiple Sessions. Make sure you always keep sound library files and shared soundfiles in a folders outside of the current Session's Audio Files folder.

The product of the compaction process is generally an increase in the available hard disk space.

To compact a Session:

- Open the Session you want to compact.

- Choose the Compact Session command from the Session menu. When you choose this command, you get this Handle dialog:
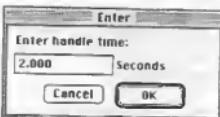
```
┌──────────── Enter ────────────┐
│  Enter handle time:           │
│  [2.000    ]  Seconds         │
│     ( Cancel )    ( OK )       │
└───────────────────────────────┘
```

The **Handle Size** setting allows you to keep a little bit of extra audio data before every region start and after every region end, which will be useful in the future if you plan to crossfade the regions. You will probably want to set your handle size to at least 2 seconds for this purpose.

- Enter your handle size and click on the OK button. The compaction process may take a few minutes.

Note:

If you use entire soundfiles your Session, you will find that there is no unused audio data to delete from those files. In such cases, compaction will not increase your available disk space.

WARNING:

When your Session contains crossfades, you must pay special attention to your use of the Compact Session and Compact Audio commands. Both of these commands offer an adjustment called "Handle Size," which allows you to choose how much source audio before each region's start and after each region's end will be retained when the source soundfiles are compacted. It is possible to compact a Session or soundfile with smaller handles than you would need to recreate Session crossfades. (Remember, crossfades are built from the sound data before the beginning and after the end of the regions.) Compacting with such a small handle size will not alter your current crossfades. However, if you delete crossfades or perform edits that delete crossfades after you have compacted with a small handle size, there may not be enough data to recreate the deleted crossfades.

Spotting Audio Regions to Time Code

One of the most common tasks in the audio post-production process is the placement (or 'spotting') of sound to a particular SMPTE frame. DECK II allows you to do this in a very simple way using the normal editing tools.

To spot an audio region to a specific SMPTE frame:

- Open the Track window and set the units of the window to SMPTE using the Axis Units pop-up.

- Click on the Edit mode button to switch to Object mode.

- Add the audio region you wish to spot using the process described at the beginning of the chapter.

- Click and hold on the audio region you wish to spot.

- Drag the region to the frame you desire.

As you drag the region, the numeric indicators near the upper right of the Track window are updated to show the start time, end time, current time, and duration of the selected range. The current time is the time that is directly under the cursor.

Hint: The current time indicator is particularly useful when you want to spot a sound by an internal sync point (a point other than the start of end of the region). If, for example, you had a 'car by' with a skid sound half way through, you could place the mouse at the skid sound and spot the current time to the desired frame.

Hint: You do not have to drag the region to place it. You can also Copy or Cut the region, click to place the insertion point at the correct frame, and then choose the Paste At or Paste After command.

Important Hint: If you know the exact time you wish to spot a region, double-click on the region, which brings up the Region Info dialog. You can change the region's start time by typing in the new time or capturing one. You can also change the region's name by typing in a new name.

Importing a QuickTime Movie

DECK II is not only useful as a 16-bit audio workstation, it can also be used as a QuickTime audio post-production tool. It is very easy to import any existing QuickTime movie, and synchronize DECK II audio and automation to that movie. (If you are using OSC's METRO sequencer, you can also synchronize any MIDI to the same QuickTime movie at the same time.) DECK II is capable of playing back four tracks of 16-bit audio **and** a QuickTime movie (and that movie's 8-bit audio) **simultaneously from a single hard disk.** (For more information about synchronizing DECK II automation and audio to QuickTime movies, see Chapter 7.)

To import a QuickTime movie into DECK II:

• Create a new Session or open the Session you wish to sync to a QuickTime movie.

• Choose the Import Movie command on the QuickTime menu.

When you choose the Import Movie command, this dialog appears:
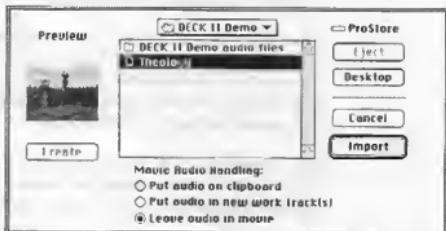
• Use the file selector area to find and highlight the movie you want.

• Choose what you want to do with the selected movie's existing audio (if there is any).

You must select one of the following options:

Put audio on clipboard: This option is a **conversion** option. It automatically removes the source audio from the QuickTime movie and converts it to 16-bit monophonic Sound Designer II file(s). These files are created in the Session's audio files folder, and then placed on your Macintosh Clipboard for pasting into any track in the Track window. To guarantee that the Clipboard file will sync to the imported movie, you will need to drag or paste it so that it starts at the Session zero time.

Hint: Remember, if the source audio was stereo, you will need to select two tracks when you paste the audio.

Put audio in new work track(s): This option is a **conversion** option. It automatically removes the source audio from the QuickTime movie and converts it to 16-bit monophonic Sound Designer II files. These files are created in the Session's audio files folder, and then placed onto two new playlists on work tracks at the bottom of the Track window. To play back these tracks, click on the track name area(s) to select the track, then drag the track up to one of the play tracks. (You can also use the playlist pop-up at the bottom of any track in the Mixer window to move these new playlists up to playback tracks.) Choose this option to make sure that the original QuickTime audio will be included in any 16-bit stereo mixdowns and in exported QuickTime movies.

Leave audio in movie: This option performs no file conversion. The original audio remains in its source form, and is still associated with its QuickTime picture. This audio will play back along with all **DECK II 16-bit** tracks when you play back the Session. Note, however, that this audio left in its movie will generally play back through your Macintosh speaker or audio output. Choose this option if you wish to use the original QuickTime audio as guide audio only. When you leave your audio in the movie, you will get an extra track of playback, but that track will be erased when you Export your finished QuickTime movie with its new audio.

• Click on the Import button

After a few moments the QuickTime movie will appear at its native size in DECK II's QuickTime window. If you chose to add audio to the Clipboard or to put audio on a work track, the conversion process may take a few moments. If you added the audio to the Clipboard, you will need to paste it onto a track (making sure that it begins at the Session start). You are now ready to continue the process of recording, adding, mixing and automating new audio for your movie. The QuickTime movie will always play back in sync with the DECK Session, and the movie will always open whenever the Session is opened.

Note:

DECK II will allow you to import QuickTime movies that have audio at unsupported sample rates. If you import a QuickTime movie with sampled audio at a sample rate other than 48, 44.1, 24, 22.05, 12, or 11.025 kHz, and you choose to place that audio on the Clipboard or on a Work Track, DECK II will import the audio as 16-bit, but the audio will not sync correctly to the source QuickTime picture. If you are doing sync work with QuickTime movies that contain audio at odd sample rates, you will need to do one of the following things before you import the audio into DECK: 1) Resample that audio (in Sound Designer II, for example) to one of the supported rates, or 2) import the movie and leave the audio in the movie itself. If you use option 2, you can always route your Macintosh CPU audio output to the input of your audio card and lift the QuickTime source audio in real-time. Future versions of DECK will automatically sample rate-convert the source audio at import time.

Hint:

If you are using DECK II as a QuickTime audio post-production tool, make sure to try the **Chase Positioning** command on the QuickTime menu. This command turns on QuickTime chase mode, which automatically pops the QuickTime window to show the current frame when audio regions are moved. (The frame at the region's start time is always shown.) This is an indispensable function for spotting music and effects to specific frames.

Hint:

QuickTime movies will generally not play back at 30 frames/second on any off-the-shelf Macintosh. If you plan to use DECK II's QuickTime movie window to play video guide tracks for tape-based

audio post-production, you may want to obtain a QuickTime accelerator. For example, RasterOps' MediaTime board, coupled with their MoviePack JPEG compression board will allow you to view full-screen, 30 frame/second QuickTime movies from the hard disk as you work within DECK. A second Macintosh color monitor is also preferable in such a configuration.

Using the Tempo and Time Signature Settings

The DECK II Track window offers some simple tools that make it possible to edit audio according to traditional bar and beat settings. This is an absolute necessity when you are recording or arranging music according to a MIDI tempo, click track, or MIDI sequencer track. When you run DECK II with OSC's METRO sequencer, the tempo settings take on particular importance, because they allow you to match bar and beat edits between the two programs. This really makes DECK II and METRO function in a fashion that is useful for songwriting. For more information on using DECK II with Metro, see the Using MIDI chapter of this manual.

To set and use DECK II's tempo and time signature information:

- Open the Track window and set the units of the window to Beat using the Axis Units pop-up.

- Click and drag on the Tempo selector to set a new tempo.

Tempo: 110 BPM
Sig: 4 / 4
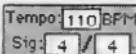
Hint: You can also hold down the command key and click on the selector to enter the new tempo or time signature as text. Then press the return key on your Mac keyboard to apply the change.

- Click and drag on the time signature numerator selector to set the number of beats to a measure.

- Click and drag on the time signature denominator selector to set the value of the note that should be considered 'one beat.'

For example, setting this to 4 means that a quarter note is considered to be one beat.

As mentioned, these values are very useful for song-oriented arrangement. When you set these values, you are determining the units that will be used by the beat mode axis markers, and the associated grid settings. Note that the tempo and time signature values only effect the way that DECK II's Track window time axis, grid and numeric indicators function (and, of course, the Transport window's counter). The tempo and time signature values to not alter the placement of any audio regions unless you have configured DECK as described in the Important message below.

Note: If you are using OSC's METRO sequencer, you will find that any tempo and time signature changes you make in METRO will automatically be made in DECK. Also, any current selection range in METRO's Note Editor or Tracks window will automatically be selected when you switch to DECK. Note, however, that changes made to tempo and time signature in DECK are not passed to METRO when you switch (METRO is thought of as the tempo master), so you should change your tempo and time signature information in METRO if you are running both programs. **Remember, DECK II now supports tempo maps, so METRO tempo maps will always be reflected on the DECK II Track window axis markers (when you are in Beat mode).**

Important: If you are working in Beat mode, there is a circumstance in which you may wish to have audio regions stick to their bar and beat placement when tempo is changed. If you are using DECK II as a virtual drum machine (playing individual drum sounds back as regions), then you will often want to make sure that any tempo changes will adjust audio region placement to make sure that the regions still start at their original bar and beat locations. In this situation, changing tempo will alter where bar and beat boundaries occur in relation to real-time, and bar/beat start times are considered to be 'relative times' rather than 'absolute times.' DECK offers a special preference for this type of editing. If you wish the regions to stick to their bar and beat locations whenever tempo is changed (in Beat mode), then see the **Change region start times with BPM change** preference (under General preferences on the File menu's Preferences submenu). When this option is turned on, tempo changes in Beat mode will adjust the placement of audio regions so that they retain their bar and beat locations. See Chapter 7 of this manual for more information.

This concludes the Track window section of this manual. To learn about synchronization, mixing and mastering, see the next chapter. If you have questions about specific DECK II commands, buttons, or windows, see the Reference chapter (Chapter 8) of this manual.

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SIX

## SYNCHRONIZING, MIXING AND MASTERING

Introduction

DECK II is primarily a multitrack hard disk recording, editing and mixing environment, but DECK II offers the ability to augment your system with the use of MIDI. This chapter of the DECK II manual focuses on the specific tasks you'll need to understand, in order to get the most out of DECK II's MIDI functions. Using the MIDI functions will enable you to synchronize your Session to SMPTE timecode, use DECK II as a master timecode source, import a MIDI file for synchronous playback with your Session, and control DECK II with an external MIDI device. You can also use OSC's METRO sequencer (or any other capable sequencer) to edit MIDI files and digital audio at the same time.

MIDI Setup

Before you can use DECK II's MIDI functions, you will need to configure your MIDI setup. This is accomplished with the MIDI Setup command on the Options Menu. When you choose this command, the MIDI setup dialog associated with your MIDI system will appear.

DECK II Internal MIDI Setup

If you do not have OMS or the MIDI Manager installed, DECK II's internal MIDI Setup dialog will appear:

Please configure the serial ports:

☑ Modem Port Speed:	☐ Printer Port Speed:
○ 0.5 MHz	○ 0.5 MHz
◉ 1.0 MHz	◉ 1.0 MHz
○ 2.0 MHz	○ 2.0 MHz
○ Fast	○ Fast
◉ Generic	◉ Generic
○ MIDI Time Piece	○ MIDI Time Piece
○ Studio 5	○ Studio 5

[Cancel] [OK]
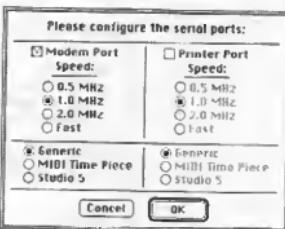
You can use this dialog to configure DECK II for your basic MIDI setup. If you are a serious MIDI user, OSC suggests you install OMS (see below).

The Open Music System (OMS)

If you are an advanced MIDI user you are probably familiar with the Open Music System (formerly the Opcode MIDI System). OMS consists of a set of System documents that, along with the OMS Setup application, allow you to create MIDI instruments and a general MIDI setup that is shared by all OMS-compatible programs. OMS is an excellent system, because it allows you to create a single MIDI system configuration for your entire studio, and all OMS-friendly applications will understand that configuration. One of the main benefits of this is a set of 'common instruments.' Once you have set up your OMS environment, OMS-compatible applications can list all of your MIDI instruments (including devices lime interfaces and controllers) by name. This makes it possible to avoid defining and setting up your MIDI environment in every MIDI-capable program. For advanced MIDI users, OMS is highly recommended.

When you have OMS installed, configure DECK II as follows:

• Open any DECK II Session.

• Choose the MIDI Setup command on the Options menu. This dialog appears:

This is the standard OMS MIDI Setup dialog which is common to most OMS-compatible programs. **If you are running DECK II with OMS-compatible slave programs** (OSC's METRO sequencer, for example) then set up the dialog to allow 'Only OMS Applications.' This will make it possible for you to switch between DECK II and the slave program(s) during playback without forcing MIDI or audio playback to stop. **If you are running DECK II with programs in the background that are NOT OMS-compatible** then select the 'Allow Non-OMS Applications' option. This will allow the ports to be shared, but may stop MIDI and/or audio playback when you switch between applications.

For more information about configuring and using OMS, see the METRO manual or your OMS user guide.

Apple's MIDI Manager

For many MIDI users, particularly those with MacProteus (or other MIDI playback) cards, or programs such as Master Tracks (which are not OMS compatible), the Apple MIDI Manager and MIDI Driver have become important software components. The MIDI Manager and MIDI Driver are System documents that, along with Patch Bay application, allow you to route MIDI between applications and the Mac serial ports. For some applications the MIDI Manager is required. In most situations, however, the **MIDI Manager is unnecessary and actually slows down MIDI operations** on your Macintosh. Worse than that, MIDI Manager's inefficiency may also cause multitrack hard disk playback and recording to bog down, thereby decreasing the overall power of your system.

DECK II functions both with and without the MIDI Manager, so **if you don't *need* the MIDI manager, don't use it.** If you do use the MIDI Manager, you will need to make sure that MIDI is routed correctly for playback and recording. Also you may want to increase the size of your disk buffers to up the performance of your Macintosh (see the General preferences on the File menu's Preferences submenu for more information).

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To set up the Apple MIDI manager:

• Make sure you've started up your Mac with the Apple MIDI Driver and MIDI Manager documents in your System folder.

  You will also need the Patch Bay application.

• Start up DECK II.

• Open the Patch Bay application. The PatchBay window appears.

  The PatchBay window shows the current Patch Bay setup. You can route MIDI from any source to any destination by dragging from any output arrow to any input arrow. Once you have created a patch, you can save it for later use.

• Double click on the Apple MIDI Driver icon in the Patch Bay. The MIDI Setup window appears.

  Use the MIDI Setup window to configure your MIDI ports. If you are using DECK II with the MIDI Manager, make sure that you have set up this window with all Time Code Output and Filter Time Code options turned off. The MIDI Patchbay should be used as a router only - not for any explicit timing tasks.

• Close the MIDI Patchbay window when you are done.

  DECK II and the MIDI Manager are now ready for use.

  Once again, the MIDI Manager is not designed ideally for real time programs like DECK II, so if you don't need the MIDI Manager, don't use it. For more specific information, see the Appendix of this manual.

MIDI Preferences

The next step in configuring your system for MIDI is opening the MIDI Preferences on the Preferences Submenu on the File Menu. When you choose this command, the following dialog will appear:
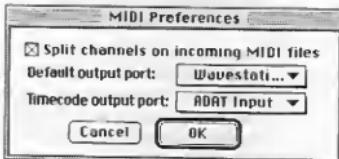
```
┌─────────────────────────────────────────┐
│▒▒▒▒▒▒▒▒▒▒ MIDI Preferences ▒▒▒▒▒▒▒▒▒▒▒▒│
├─────────────────────────────────────────┤
│ ☒ Split channels on incoming MIDI files │
│ Default output port:    [ Wavestati...▼]│
│ Timecode output port:   [ ADAT Input ▼ ]│
│       ( Cancel )      [   OK   ]         │
└─────────────────────────────────────────┘
```

Use this dialog to set the following characteristics for DECK II:

Split channels on incoming MIDI files: When this preference is on, DECK II will split the channels when you import a MIDI file. This is useful when you are importing Type 0 MIDI files, which store all track data in one channel.

Default Output Port: This pop-up lists your MIDI ports and uses the first one on the list as the default output port. To change the port, simply select a different port using the pop-up menu.

Timecode Output Port: This pop-up controls through which port outgoing MIDI Timecode is sent. To change the port, simply select a different port using the pop-up menu.

Note: If you plan to import large MIDI files, you should first increase the MIDI buffer size in the Memory and Storage Preferences. Remember, whenever you increase the buffer size, you should also increase the amount of RAM allocated to DECK II. For more information, see the Memory and Storage Preferences in the Reference section of this manual.

You have now finished configuring your MIDI setup and can use any of DECK's MIDI functions.

Sending MIDI Timecode

You can use DECK II as a timecode master very easily. Simply choose the Send Timecode command on the Options menu. Deck II will automatically generate timecode and send it through the Timecode Output Port you chose in the MIDI Preferences. To stop sending Timecode, choose the command again. You can tell if DECK II is sending timecode by looking for a check next to the command. If the command is checked, DECK II is sending Timecode.

MIDI Map Mode –
Controlling DECK II with External MIDI Devices

The DECK II Mixer window contains a number of faders for controlling level and stereo pan, and real-time adjustment of those faders can become very frustrating if you are only using the mouse. Although the mouse is a very useful pointing device, it is limited in a mixing environment because it only allows you to adjust a single fader at one time. This is much more cumbersome than using your hands on a standard mixing board (where you can move multiple faders at one time).

To cope with this problem, DECK II offers two advanced mixing tools: Mixer state buttons (explained in Chapter 6 of this manual), and MIDI fader mapping. DECK II's MIDI map mode allows you to map any continuous MIDI controller to any volume or pan fader (or number of faders). For example, you could map your keyboard modulation wheel to control the smooth motion of track 1 and 2 volume faders. Or, if you have a MIDI fader box (such as the J. L. Cooper Fader-Master), you could map all of the track volume and pan faders so you could control the entire mixing board from the external MIDI fader controls.

To map DECK II's faders to external MIDI controllers:

• Open the Session that contains the faders you wish to map.

- Choose the MIDI Map Faders command on the Options menu.

  You have now switched on MIDI Map mode. You will see a check mark in front of the MIDI Map Faders command, and all of the faders on the screen will automatically be highlighted in green.

- Make sure you have a MIDI controller source connected to your Mac MIDI interface, and that the interface is connected and routed to DECK II.

- Click to highlight the fader or faders you wish to map.

  This fader(s) are now ready for automatic mapping to a MIDI controller. They will be highlighted in yellow.

- Move the controller to send controller events.

  When you move the controller (mod wheel or MIDI fader, for example), controller events are sent. When DECK II receives these events, it knows their source, and automatically maps the currently selected fader or faders to that source. You will know that the fader(s) have been mapped, because they will be highlighted in red.

Hint: To create a fader group, simply map multiple faders to a single external controller. Then, all of those DECK II faders will move whenever the controller is moved.

- Repeat this process until all of your desired faders are mapped.

- Choose the MIDI Map Faders command again to turn off map mode.

  All of the faders will return to their original colors. You are free to move all of the mapped faders with the mouse, but whenever you move the source controller, you will see that the faders remain mapped.

Note: You must turn off MIDI Map Faders mode before the mapped external controllers will start moving Mixer window faders.

• Move your external MIDI controllers to see how the mapped screen faders move along with them.

This map configuration will automatically be saved with the Session, and will be turned on whenever you open the Session.

Important: During playback, the DECK II screen may appear to move in a 'chunky' manner. The VUs and faders may seem to jump from position to position. This occurs because DECK II's audio tasks must take precedence over the screen display. **This chunky movement is not reflected in the audio.** If you move a *mapped* fader smoothly during playback, a smooth adjustment will be made to the audio, even if the screen appears to jump.

To unmap a mapped fader:

• Open the Session that contains the faders you wish to unmap.

• Move your external MIDI controllers to see how the mapped screen faders move along with them.

• Choose the MIDI Map Faders command on the Options menu.

You have now switched on MIDI Map mode. You will see a check mark in front of the MIDI Map Faders command, and all of the mapped faders on the screen will automatically be highlighted in red. (Other faders will be highlighted in green.)

• Click once on any mapped (red) fader to unmap it.

The fader will be filled highlighted in green to indicate that it is no longer mapped.

• Choose the MIDI Map Faders command again to turn off map mode.

You have now unmapped the fader. Remember to save the Session if you wish to unmap the fader permanently.

Using DECK with the METRO Sequencer on a Single Macintosh

DECK II offers the ability to synchronize to OSC's **METRO** sequencer on a single Macintosh. When you use DECK II and METRO together, you get the best of both worlds: A digital audio workstation with a full-function high-end MIDI sequencer in an integrated environment. You can write keyboard parts and record vocals at the same time. You can edit and arrange full songs (consisting of MIDI and audio) by bar and beat. You can also write and edit complex MIDI parts and print them down to digital audio in a matter of seconds, and then layer and submix those audio tracks while playing back more MIDI tracks.

Running DECK II and METRO together requires no special software or complicated setup process. If the two programs are running simultaneously, they automatically connect to each other and stay synchronized. You can edit, play and record from either program and the other runs in sync. You can even switch between programs during playback and edit without stopping. Each program can save and open documents automatically in the other, and can start up and quit the other. The level of cross-program control is up to you. Here are some suggestions for configuring DECK and METRO to run together:

Setting the DECK Connections on the METRO Setup menu: METRO offers a settings dialog that allows you to configure the level of interaction between DECK II and METRO. When you choose the DECK Connections command in METRO, this dialog appears:
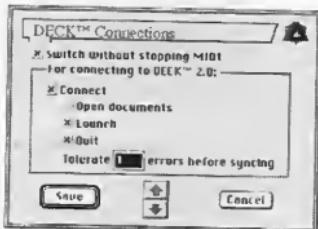
If you are planning on running DECK with METRO in the background, you can set the preferences as shown in the above illustration. This setup assumes that you will be starting DECK, and that you always want METRO to be started up and connected in the background. To complete the configuration process, you will also want to set up DECK II's Slave Settings, as explained below.

Setting the Slave Settings preference on the DECK File menu: DECK offers a settings dialog that allows you to configure the level of interaction between DECK II and any compatible slave program (MIDI SEQUENCER, etc.). When you choose the Slave Settings preference on DECK II's Preferences submenu, this dialog appears:
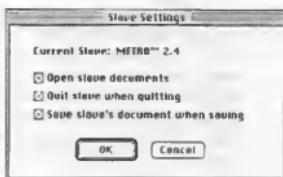

When you are running DECK with METRO in the background, you can set the slave settings as shown in the above illustration. This setup assumes that you will be starting DECK, and that you always want METRO to be started up and connected in the background. When you open a Session document with DECK II configured in this fashion, DECK II will automatically open the associated MIDI file in METRO. Although you will not see METRO (unless you switch to it), playback within DECK will automatically control playback from METRO (and vice versa).

Important:

When you are running DECK and METRO on a single Macintosh, choose one of the two programs (the one you will usually run in the foreground) and **set only that program to 'open documents' in the other program.** If you generally plan to open METRO and work on

MIDI first, then set METRO to open documents. If you usually lay down audio before adding MIDI, then set DECK II to 'open documents' (see the Slave Settings preference on the DECK II Preferences submenu).

Setting the screen update speed for METRO within DECK II: DECK II offers a special preference that allows you to set how often the METRO screens update when they are in the background. (It also controls how often the DECK II screens update when they are running in the background behind METRO.)
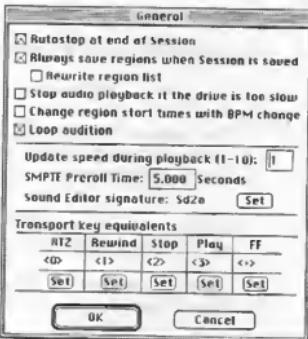
To update the screen of METRO (or any other background program) as often as possible, set the 'Update speed during playback' to '1.' This will allow the background program to update as smoothly as possible, and is suggested if you are using METRO. If you wish to lock out the screen updates of background programs during playback, set the 'Update speed during playback' to '10.'

Note: DECK II and METRO have the ability to exchange the base tempo of
                 any documents. If you set tempo within METRO, that tempo will be
                 reflected automatically in DECK II. If you set tempo within DECK II,
                 that tempo will be reflected automatically in METRO.

Setting Up DECK II with a MIDI or Audio Click

DECK II is primarily an audio program, so it has no internal MIDI
metronome. If you wish to use a click or metronome, you will need to
use OSC's METRO sequencer (or another compatible slave sequencer)
running in the background on your Mac. You can also create a click
track in a different sequencer and import the file to play with your
Session (see Importing MIDI files below.)

**To set up and run DECK II with MIDI or audio metronome:**

• Make sure that DECK II and METRO are configured to run together.

   The programs are set at the factory to run correctly together, but you
   can review these settings by reading through the DECK and METRO
   configuration information earlier in this chapter.

• Create a new Session in DECK II, then switch to METRO and create a
   new METRO document.

   You can accomplish this by using the New command on the File
   menu in both programs.

• Click and drag the mouse on the **Bars** setting on any track in the
   METRO Tracks window to set the number of click bars you want.

DECK II
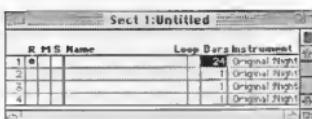
You can set this to any number you desire. You can use a short
setting as a basic count in. Set the bars count to a high number (600,
for example) if you want a long period of click.

- Click on the dialog door in the lower right-hand corner of the
  METRO tempo setting area in the Bridge window.
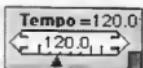
This opens the following dialog:
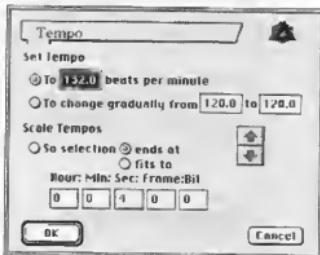
- Use the METRO tempo dialog to enter the tempo you desire. Then
  click on the OK button.

You have now set the tempo of the click (and the start tempo of the
METRO MIDI file as a whole). Now you just need to turn the
metronome on.

- Click on the METRO Metronome icon in the Bridge window to turn
  on the MIDI click.

The click is now on. It can be set to trigger any MIDI device, or to play a number of sounds via your Macintosh speaker or CPU audio output. Whenever the click is turned on, it will automatically play when you hit your DECK II play button. For more information about editing and configuring the METRO metronome, consult your METRO user's guide.

Important: DECK II and METRO share a common tempo setting and exchange tempo maps. To change the shared tempo, set the tempo in METRO as described above. Changing the tempo in DECK II will not automatically change the tempo in METRO, but METRO will change the tempo in DECK II. Note that DECK II does support MIDI file playback in tenths of a BPM, but does not yet allow entry in tenths.

Hint: Remember, the METRO Transport window can be set to two different sizes. If you can't find the tempo and metronome setting areas, click on the Transport window's grow box to reveal all of the transport controls.

Importing MIDI Files

If you do not own METRO but would like to hear a MIDI file that you have created in a sequencer play back with your Session, you can use DECK II to import the MIDI file. First, open up the MIDI window (choose MIDI from the Windows Menu.) It will look like this:

Click on the Import Button. This will bring up a standard file dialog asking you to pick a file to import. When you have opened the file,

DECK II will take a few moments to translate the file. When DECK II is finished importing the file, the MIDI window will look something like this:

You can change the MIDI file that is played with the Session by clicking on the Import button again and choosing a new file. DECK II will erase the previous MIDI data to make room for the new file.

MIDI files are imported with their tempo maps, and DECK II will play back those tempo maps AND display audio bar/beat data according to those tempo maps. To view audio waveforms visually adjusted to tempo-accurate bar/beat display, just choose Beat on the Option menu's Time Mode submenu.

Important:

DECK II's tempo indicator only shows you the first tempo of any MIDI file. The display is not updated to show each new tempo. Entering a new tempo will clear out the existing tempo map and set the Session to that single new tempo.

You can also use the Import MIDI File command on the File Menu to bring up the same dialog. You can use the Dispose MIDI File command on the same menu to erase the current MIDI file without importing new data.

If you plan to make changes to your current MIDI file, you can turn on the subscribe button. This will enable DECK II to reflect those changes in your Session. For more information on the Import and Subscribe functions see the Reference section of this manual.

MIDI Thru

Another of DECK II's MIDI functions is MIDI thru. To use MIDI thru, open up the MIDI window, and press the button on the Thru track. It will look something like this:

Deck II will take all MIDI events coming into the in port and send them back out the port you choose on this track. You can change the port by clicking on it and selecting a new port using the pop-up menu.

This concludes the Using MIDI chapter. For information about SMPTE Sychronization, see Chapter 7 of this manual. For exact information about DECK II's MIDI window, see the Reference chapter of the manual.

SEVEN

USING MIDI

Introduction

This chapter of the DECK II manual focuses on the methods you will employ to synchronize DECK II to a video or audio deck, and the steps you will follow to automate a final mix and create a digital master or master file. Synchronization is the key function you will need in order to add audio to video or film picture, or extend the tracks of your multitrack with synchronized hard disk audio tracks. Mixing and mastering are generally the final steps in any audio post-production process. They generate the 'finished product' which you will publish or deliver to clients. When you have finished this chapter, you will have all of the knowledge necessary to take a DECK II audio project from start to finish, and produce a finished digital audio master, sync sound track or QuickTime movie.

Synchronization

One of the most important features of DECK II is that it provides a true non-linear multitrack synchronization environment. DECK II makes it possible for your Macintosh hard disk audio to operate seamlessly in sync to video and other audio sources. The task of synchronizing picture and sound is fully done by DECK II, which runs as a slave to your SMPTE source. All you need to do is route the SMPTE signal from your video or audio source to a compatible Macintosh MIDI interface (Opcode's Studio 5 or MotU's MIDI TimePiece, for example). Then, when you select the applicable SMPTE frame rate in DECK II, and put DECK II online, the current Session will automatically synchronize to the external time code source.

If you plan to use DECK II in a sync environment, you should start with a basic understanding of SMPTE time code. If you are already familiar with time code, you are ready to use the system. If you have never used SMPTE time code, it would probably be wise to read through one of the publications listed in the appendix of this manual.

An Important Note About Trigger Synchronization

In the world of computer-based audio synchronization, most systems differentiate between 'continuous resynchronization' and 'trigger sync.'

Continuous resynchronization refers to systems that measure the playback speed stability of the of a master timing (SMPTE) source, and constantly adjust slave playback speed to match the master device's fluctuation. Trigger sync simply waits for a start frame and triggers playback. In this case, slave playback speed is not altered, regardless of master speed fluctuation.

DECK II offers both continuous resync (the native mode) and trigger sync. It is important to note, however, that DECK II only offers continuous resync **on playback**. This makes DECK II very useful for audio post-production tasks, but it makes it difficult to use DECK II as a recording slave with older analog multitrack decks and low-end VCRs. Whenever you record, DECK II must use trigger sync, because it is impossible to accomplish the multiple sample rate conversions necessary for continuous record resync using software alone. (Pro Tools and Sound Tools II offer the option in hardware using the SMPTE slave driver, and DECK II supports this configuration.) There are a number of elegant ways for dealing with this situation:

Make sure all devices are locked to house sync: For the best possible results, you should make sure all of your devices are plugged into a central sync reference signal, and run DECK with **Trigger Sync** turned on. By putting the burden of servo-accuracy on the shoulders of the different analog devices (instead of making your Mac constantly change the sample rate), you will always maintain the highest possible audio fidelity. In most environments a 'video black' signal, referred to as 'black burst,' is used as the central reference. When the same signal is supplied to all rooms and all devices, it is often called 'house sync.' Many multitrack audio decks and all video decks can make use of such a signal. Whenever possible, hook up all of your analog devices to black burst.

Hint:

If you are using an inexpensive consumer video deck, you can generally improve your record-sync accuracy by using the 'poor person's black burst.' You can accomplish this by turning on any video camera (a 'Handycam' will suffice), and hooking up the video out from the camera into the video in on the VCR. This will force the VCR to genlock to the camera, which usually supplies a much healthier sync signal than the VCR alone, and forces the VCR to play back with fewer time fluctuations.

Slave DECK II only to digital sources: When you slave DECK II to a digital source, such as timecoded DAT or digital multitrack recorders, you can usually avoid any synchronization problems. These devices are very dependent on the time accuracy of their playback, and usually will not fluctuate playback speed. If you are slaving DECK II to such a device, you should put DECK into Trigger Sync mode, then proceed as usual. This is one of the best possible configurations for DECK II use.

Use a SMPTE Slave Driver: If you have a Sound Tools II or Pro Tools system, you can make use of Digidesign's SMPTE Slave Driver. The SMPTE Slave Driver is a single rack-space box that converts analog SMPTE signal into digital slave clock and word clock. The Slave Driver measures speed fluctuations in the source SMPTE signal and continuously changes the record AND playback sample rate of the Sound Tools II or Pro Tools **hardware**. This solution offers the best system performance and audio fidelity, because all hard disk audio recording and playback speeds are adjusted directly at the hardware, thereby avoiding the degradation of the audio signal often caused by software-based real-time sample rate conversion.

Important:

There is one thing you must remember: You will seldom, if ever, achieve positive results if you are trying to use DECK II with an Audiomedia or MediaTime card to extend your old analog tape machine by recording tracks on-line, editing those tracks, and then playing those tracks on-line to re-record them back onto the analog deck. Because DECK II cannot perform continuous resync on record, and because older analog multitracks seldom play back twice at the same speed, you will achieve inconsistent results. This is caused by the fact that the analog device is inconsistent, and DECK II can only

control for these inconsistencies on playback. Although you may succeed in using this using DECK II in this fashion, there is no way to rely on this method time after time.

You are ready to begin synchronizing DECK to SMPTE.

To synchronize DECK II recording or playback to time code:

- Make sure that you have your SMPTE source hooked up to a MIDI interface that is capable of SMPTE-to-MIDI Time Code conversion.

  Opcode's Studio 5 and Mark of the Unicorn's MIDI TimePiece are recommended examples of such devices.

- Open the Session you wish to synchronize to time code.

- Choose the MIDI Setup command on the Options menu. This dialog appears:
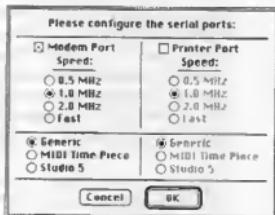
Use this dialog to make sure that you have the correct MIDI port enabled, and that it is set to the correct speed. For most applications, you can turn on both the Printer and Modem ports and set them to the **1.0 mHz, Generic** settings.

Important: **If you are syncing to SMPTE and running OSC's METRO sequencer in the background (or foreground),** configure DECK II to receive sync and use it to control synchronized playback. **DO NOT** set METRO to sync to SMPTE. Set up METRO as for normal, simple playback. DECK will handle all synchronization tasks, and will control METRO playback directly.

• Choose the SMPTE Start Frame command on the Options menu. This dialog appears:

```
┌─────────────────────────────────────────────┐
│  Hour  Min.  Sec.   Fr.   Subfr.             │
│  [ 2 ] [15] [ 0 ] [ 0 ]  [ 0 ]   [ Capture ] │
│        ┌──────────┐  ┌──────────┐            │
│        │    OK    │  │  Cancel  │            │
│        └──────────┘  └──────────┘            │
└─────────────────────────────────────────────┘
```

• Type in the hour, minute, second, and frame number of the SMPTE frame that will be used as your Session zero time (the beginning of your coded tape, or the scene you are working with). Then click on the OK button.
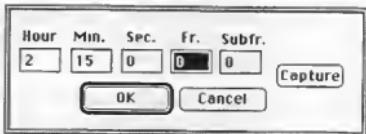
Hint: You can click on the dialog's **Capture** button to lift the current time code frame from your time code source. Note, however, that the Capture button will not lift an accurate time **unless** you are syncing to video tape using Vertical Interval Time Code (VITC). If you are using standard Longitudinal Time Code (LTC), the Capture button will lift the last frame that was received, but that frame can vary by one second or more from the actual position. This situation is caused by the fact that only VITC can be read at slow shuttle speeds and in still-frame/ pause mode. LTC frame addresses are unreadable at slow speeds and in still-frame/pause.

The time you enter in the previous dialog will be your SMPTE start time, and the **return-to-zero** button will always return you to this point.

- Choose the Online command on the Options menu. A check appears in front of the command to indicate that the current Session is online.

- **To play back audio in sync with incoming time code**, press the Play button in the transport to put the current Session in play-standby.

The status indicator in the Transport window now says 'Standby' to indicate that DECK II is waiting for incoming time code. As soon as any time code is present at the selected MIDI port, DECK II will synchronize and begin playback.

- **To record audio in sync with incoming time code**, make sure you have a DECK II track record-enabled (in the Mixer window) as described in chapter 4 under 'Recording your first track.'

- Press the Record button and then the Play button in the transport to put the current Session in record-standby.

The status indicator in the Transport window now says 'Standby' to indicate that DECK II is waiting for incoming time code. As soon as any time code is present at the selected MIDI port, DECK II will synchronize and begin recording. Note that it may take a few seconds for audio recording and playback to lock and begin.

Hint:

The SMPTE synchronization pre-roll time is user-adjustable in the **General** preferences on the File menu's Preferences submenu. This setting is adjusted in seconds, and the time you enter will be the amount of time DECK II takes between the first received SMPTE frame and the beginning of playback. If you have a fast Macintosh and a fast

drive, you can set this preference to 2 seconds or less. If you are having trouble getting DECK II to sync ('missed in-point' messages), then set this value to 6 or more seconds.

Hint: DECK II allows you to perform a host of frame-accurate visual edits of audio waveforms. For more information about spotting effects and editing audio to SMPTE frame, see the Visual Waveform Editing in Chapter 5 of this manual.

Live Video

If your computer has video input capabilities (AV Macintoshes or a MediaTime card, for example) you can monitor your video in the QuickTime window. Simply choose the Live Video command from the QuickTime menu. Deck II will display any video coming into the computer through the video input. You may change the size of the QuickTime window using the Size submenu on the QuickTime menu. For more information on configuring Live Video, consult the Reference section of this manual.

Synchronizing DECK II to QuickTime Movies

DECK II is not only useful as a 16-bit audio workstation for syncing to external devices. It can also be used as a QuickTime audio post-production tool. It is very easy to import any existing QuickTime movie, and synchronize DECK II audio and automation to that movie. (If you are using OSC's METRO sequencer, you can also synchronize any MIDI to the same QuickTime movie at the same time.) DECK II is capable of playing back four tracks of 16-bit audio and a QuickTime movie (and that movie's 8-bit audio) simultaneously from a single hard disk. Only a single command is required in order to do this.

To import and synchronize a QuickTime movie in DECK II:

• Create a new Session or open the Session you wish to sync to a QuickTime movie.

• Choose the Import Movie command on the QuickTime menu.

When you choose the Import Movie command, this dialog appears:

• Use the file selector area to find and highlight the movie you want.

You will always see the poster frame of the selected movie in the preview box. If the selected movie has no poster frame, click on the **Create** button to create a preview frame.

• Choose what you want to do with the selected movie's existing audio (if there is any).

You must select one of the following options:

Put audio on clipboard: This option is a **conversion** option. It automatically removes the source audio from the QuickTime movie and converts it to 16-bit monophonic Sound Designer II file(s). These files are created in the Session's audio files folder, and then placed on your Macintosh Clipboard for pasting into any track in the Track window. To guarantee that the Clipboard file will sync to the imported movie, you will need to drag or paste it so that it starts at the Session zero time.

Hint: Remember, if the source audio was stereo, you will need to select two tracks when you paste the audio.

Put audio in new work track(s): This option is a **conversion** option. It automatically removes the source audio from the QuickTime movie and converts it to 16-bit monophonic Sound Designer II files. These files are created in the Session's audio files folder, and then placed onto two new playlists on work tracks at the bottom of the Track window. To play back these tracks, click on the track name area(s) to select the track, then drag the track up to one of the play tracks. (You can also use the playlist pop-up at the bottom of any track in the Mixer window to move these new playlists up to playback tracks.) Choose this option to make sure that the original QuickTime audio will be included in any 16-bit stereo mixdowns and in exported QuickTime movies.

Leave audio in movie: This option performs no file conversion. The original audio remains in its source form, and is still associated with its QuickTime picture. This audio will play back along with all **DECK II** 16-bit tracks when you play back the Session. Note, however, that this audio left in its movie will generally play back through your Macintosh speaker or audio output. Choose this option if you wish to use the original QuickTime audio as guide audio only. When you leave your audio in the movie, you will get an extra track of playback, but that track will be erased when you Export your finished QuickTime movie with its new audio.

• Click on the Import button

After a few moments the QuickTime movie will appear at its native size in DECK II's QuickTime window. You can change the size of the QuickTime window using the Size submenu on the QuickTime window. If you chose to add audio to the Clipboard or to put audio on a work track, the conversion process may take a few moments. If you added the audio to the Clipboard, you will need to paste it onto a track (making sure that it begins at the Session start). You are now ready to continue the process of recording, adding, mixing and automating new audio for your movie. The QuickTime movie will always play back in

sync with the DECK Session, and the movie will always open whenever the Session is opened.

Note: DECK II will allow you to import QuickTime movies that have audio at unsupported sample rates. If you import a QuickTime movie with sampled audio at a sample rate other than 48, 44.1, 24, 22.05, 12, or 11.025 kHz, and you choose to place that audio on the Clipboard or on a Work Track, DECK II will import the audio as 16-bit, but the audio will not sync correctly to the source QuickTime picture. If you are doing sync work with QuickTime movies that contain audio at odd sample rates, you will need to do one of the following things before you import the audio into DECK: 1) Resample that audio (in Sound Designer II, for example) to one of the supported rates, or 2) import the movie and leave the audio in the movie itself. If you use option 2, you can always route your Macintosh CPU audio output to the input of your audio card and lift the QuickTime source audio in real-time. Future versions of DECK will automatically sample rate-convert the source audio at import time.

Hint: If you are using DECK II as a QuickTime audio post-production tool, make sure to try the **Chase Positioning** command on the QuickTime menu. This command turns on QuickTime chase mode, which automatically pops the QuickTime window to show the current frame when audio regions are moved. (The frame at the region's start time is always shown.) This is an indispensable function for spotting music and effects to specific frames.

Hint: QuickTime movies will generally not play back at 30 frames/second on any off-the-shelf Macintosh. If you plan to use DECK II's QuickTime movie window to play video guide tracks for tape-based audio post-production, you may want to obtain a QuickTime accelerator. For example, RasterOps' MediaTime board, coupled with their MoviePack JPEG compression board will allow you to view full-screen, 30 frame/second QuickTime movies from the hard disk as you work within DECK. A second Macintosh color monitor is also preferable in such a configuration.

Mixer-based Automation

The process of mixing down a multitrack recording to a stereo master is always complicated by the level and stereo pan changes that must occur during the mixdown process. Smooth fades in and out, instantaneous pan changes that are modulated to a specific rhythm – these functions usually require quite a bit of physical coordination, and they are difficult to repeat. This is why high-end mixing boards offer automated mixdown capabilities.

DECK II allows you to create record mixer automation so you can fully automate your mixdown process. Perhaps the simplest way to automate a mixdown is to create and edit visual volume and pan envelopes in the DECK II Track window. DECK II offers this fully-visual way of automating as the simplest method for accurate control of volume and stereo pan controls. **The process of creating and editing these visual automation envelopes is explained at length in the Visual Waveform Editing chapter (Chapter 5) of this manual.**

DECK II also offers more traditional real-time mixer automation that is based on the idea of 'performing' a mix, and recording the motion of the faders during the 'performance.' This mixer-based automation also creates automation envelopes that can be edited visually in the Track window. To accomplish mixer-based automation, DECK uses the concepts of 'real-time fader motion recording,' 'mixer states,' and transition time. Real-time fader motion recording is the simple recording of the actual movement of DECK II's mixer faders. This is one simple way to create automation.

Mixer state automation is more scene-by-scene oriented. A mixer state is like a picture of the current position of every fader on the mixer. Each state is stored on DECK's mixer state pop-up (in the Transport window), and each can be recalled at any time. A fixed transition time can be set, and that time is always used to fade smoothly between each mixer state.

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Although real-time recording of fader motion and mixer states may seem bit cumbersome at first, you will find that it often allows simple, one-step recording mixdown automation.

To record real-time fader motion:

• Open the Session that you wish to automate and open that Sessions Mixer window by choosing the Mixer command on the Windows menu.

• Decide which track volume and pan faders you wish to automate.

•   Use the **Automate** pop-up on the tracks you wish to automate to set (record-enable) which controls you will be recording.

You can choose "Record Volume," "Record Pan," or "Record All." You are free to choose your controls by track (for example volume on track 1 and pan on track 2), or you can use the Automation submenu on the Options menu to record all volumes and pans by choosing the **Record All** command.

Hint:

Although it is possible to record automation using the mouse as a controller, you may find this cumbersome. Remember, the mouse can only move one control at a time. For the best possible results, use an external MIDI controller (a J.L.Cooper FaderMaster, for example) to control the mixer faders that will be recorded. For more information, see the MIDI Map Faders section in Chapter 6 of this manual (or the MIDI Map Faders command in the Reference chapter).

- Click on the Transport window's Record button, and then on the Play button to begin recording automation.

- Perform your mix as desired. All motion of record-enabled faders will be recorded.

Remember, all of DECK II's recording functions work the same way with automation. For example, you can use punch-in mode to replace a segment of automation just as you would replace a segment of audio.

- Click on the Rewind-to-zero button in the Transport window, and then on the Play button to see and hear your new automation.

You can erase the automation on any track by using the erase commands located on the track's Automate pop-up. You can also use this pop-up to mute the automation on any track by setting the pop-up to **Off.**

Important:

Although DECK II's faders may **appear** to move in a 'chunky' manner, do not be deceived by this. DECK II automation is always reproduced with 24-bit accuracy (over 16 million values between full volume and no volume). The updating of the screen has a lower priority that the control of volume and pan level. Your automation will always be smooth even when the faders appear to 'jump.'

To view the visual envelopes for the motion you have just recorded:

- Choose the Track window command on the Windows menu. The Track window appears.

- Set the Display pop-up on the track that contains the automation you wish to edit to **Volume** or **Pan.**

You can now see and edit the automation envelope you created when you recorded real-time fader motion. (In the illustration, track 1 is set to display the **volume envelope**.) If you wish to edit these envelopes, you will find it easier if you first choose the Automation Thin command from the Process menu. This command will look for straight lines in your automation data and eliminate extraneous envelopes. For more information about editing these volume and pan envelopes, see the automation explanation in the Visual Waveform Editing chapter of this manual (Chapter 5).

Using Mixer States

Although it is possible to automate an entire mix without using DECK's mixer states, these 'snapshot-style' states can be very useful (especially for creating complex automation moves that should occur at specific spots). The mixer states are also quite useful, because they allow you to move all of the volume and pan faders in the Mixer window with a single mouse click. In order to use a mixer state for real-time automation, you will need to store it. Once a mixer state has been stored, it can be recorded in the same way that any real-time

automation is recorded. In fact, you can mix real-time fader motion automation and mixer state automation. Both styles of automation simply create automation envelopes that can be edited in the DECK II Track window.

To store a mixer state:

• Open the Session that you wish to automate.

• While playing back the audio, set the volume and pan faders to your liking.

You can also set these states when DECK II is not playing back.

• When the entire mixing board is set up the way you desire, hold down the command key and click on arrow button next to the spot where the mixer state should be stored.

You have now stored a Mixer State, and the arrow button next to that state can be used at any time to recall, or 'play' that state back onto the DECK II Mixer. Note that new states are created with the name "Snap" followed by a number. You can **rename any mixer state by holding down the command key and clicking on the name of the mixer state.** When you do this, the following dialog appears:
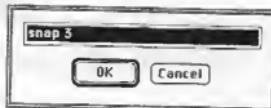
Use this dialog to type in a new name, then click on OK.

Important: DECK II allows you to store an unlimited number of mixer states. Every time you store one, it is added to the Mixer State pop-up, which contains all of the mixer states you have ever created. Each of the six current mixer states can be set to give you instant access to any other mixer state. To select a different mixer state for instant access, just click and hold on the mixer state pop-up in the mixer position you desire. This pop-up appears:
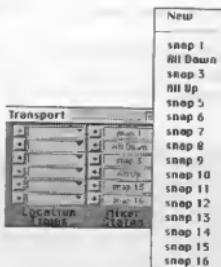
Simply use this pop-up to select the state you want. That state will be placed at the current mixer state position for instant access.

To recall a mixer state:

• Click on the arrow button to the left of the desired mixer state.

That state is instantly recalled to the DECK II mixer.

Important: All stored Mixer States are saved with the current Session, and will be present just as you left them when you next open the Session.

To record mixer state automation:

- Open the Session that you wish to automate and open that Sessions Mixer window by choosing the Mixer command on the Windows menu.

- Decide which track volume and pan faders you wish to automate.

- Use the **Automate** pop-up on the tracks you wish to automate to set (record-enable) which controls you will be recording.

You can choose "Record Volume," "Record Pan," or "Record All." You are free to choose your controls by track (for example volume on track 1 and pan on track 2), or you can use the Automation submenu on the Options menu to record all volumes and pans by choosing the **Record All** command.

Hint: Option-click on a Mixer State **arrow** button to delete the currently-loaded mixer state. Command-click on any Mixer State **pop-up** to rename the currently-loaded mixer state.

Important: Even though you are recording mixer states, only those faders that are set to record will be recorded from the states. This allows you to isolate **only portions** of your mixer states for automation recording. Remember, if you want to record all faders from your mixer states, choose the **Record All** command on the Option menu's Automation submenu. This will record-enable all volume and pan faders.

- Click on the Transport window's Record button, and then on the Play button to begin recording automation.

- During playback, click on the mixer state arrows whenever you want to record a mixer state.

The mixer state will be recorded at the moment you click the arrow. Don't worry about the exact timing accuracy of the state. All automation can be edited visually in the DECK II Track window (see Chapter 5 for more information).

Note:

Remember, all of DECK II's recording functions work the same way with automation. For example, you can use punch-in mode to replace a segment of state automation just as you would replace a segment of audio.

• Click on the Rewind-to-zero button in the Transport window, and then on the Play button to see and hear your new state automation.

You can erase the automation on any track by using the erase commands located on the track's Automate pop-up. You can also use this pop-up to mute the automation on any track by setting the pop-up to **Off**.

Important:

Although DECK II's faders may appear to move in a 'chunky' manner, do not be deceived by this. DECK II automation is always reproduced with 24-bit accuracy (over 16 million values between full volume and no volume). The updating of the screen has a lower priority that the control of volume and pan level. Your automation will **always be smooth** even when the faders appear to 'jump.'

To record mixer state automation with pre-programmed transition fade times:

• Choose the State Transition Time command on the Options menu. A dialog similar to this appears:

Hour	Min.	Sec.	Fr.	Subfr.
0	0	2	0	0

OK   Cancel
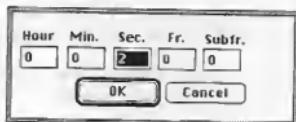
This is the dialog you would see if you had DECK II's basic units set to SMPTE frame. You can use this dialog to enter the fixed smooth fade that will be generated any time you click on a Mixer State button.

- Enter the duration of the smooth transition fade you wish, then click on OK.

This duration is the period of time that it will take to fade to the new mixer state. Here's an example: Suppose you have a mixer state that has all of the track volume faders at full volume, but all of the faders are currently turned all the way down. You set the State Transition Time to 2 seconds, and begin playback. After a few moments, you click on your "All Up" mixer state. You will immediately see the faders begin to move smoothly, and after **2 seconds**, the faders will all be in the full volume position. This has allows you to generate smooth motion on four faders at once with a single mouse click.

- To record this motion in **real-time**, simply follow the same steps explained earlier in this chapter for recording all real-time automation.

To use Mixer States in the Track window:

- Set the tracks to be edited to pan or volume.

- In Range (Waveform) mode, make an insertion point at the point in time where the automation should be.

- Click on the correct Mixer State in the Track window. The new automation envelopes associated with the mixer state will be at the desired location.

When you record mixer state automation with automated smooth transitions, the resulting automation can be edited visually, just as all automation can be edited, in the Tracks window. See Chapter 5 for more information.

Remember, DECK II's automation follows the playlist. If you move a playlist to a work track and record a new one, you will need to create automation for the new track.

Bouncing Tracks in DECK II

'Bouncing' is the process of 'ping-ponging' or submixing multiple tracks together to create one or two new tracks. The new track is then used in place of the original source tracks, thereby freeing up formerly-occupied tracks for more recording. On most four- or eight-track systems, bouncing presents the only solution to the limitations caused by a low total track count. Although DECK II imposes no restrictions on the number of tracks that can be mixed together (see Virtual Mixing below,) DECK II also allows bouncing. DECK II offers two major improvements to analog bouncing: DECK bounces tracks **digitally**, which doesn't degrade the sound quality of the source tracks. Also, DECK allows you to keep all of your source tracks, so you can always go back to the original tracks and 're-bounce' for a new submix. (Analog bouncing generally requires that the source tracks be erased so that new tracks can be recorded.) The latter of these qualities brings with it an added bonus: DECK II allows you to bounce **four or eight tracks to one or two tracks.** An analog four-track requires an open track as the destination, so there is no way to bounce four to one or four to two. The best analog result is three tracks bounced to one track.

These are not the only reasons that make DECK II's track-bouncing capabilities so superior. Perhaps the most important concept is that DECK II allows you to bounce tracks in a purely visual fashion. To bounce tracks in DECK, you simply need to select a range of time in the Track window and choose one of the **Bounce to Clipboard** commands. Your bounce takes place immediately, and the resulting track or region can be placed anywhere you desire. Here are exact instructions for bouncing tracks in DECK II:

To bounce tracks:

• Open the Session that contains the tracks or regions you wish to bounce.

- Bring the Track window to the front by choosing the Tracks command on the Windows menu.

- Switch to Range mode by clicking on the mode button:

- Drag to select the **destination range** for your bounced track(s). Your screen should look something like this:


Important: When you bounce in DECK II, all four/eight playback tracks are always included in the bounce. For this reason, it really doesn't matter upon which track you choose to select the range. Because of this, you can use the shortcut of selecting the **destination** range instead of the source range. This will return you to the Track window after the bounce is complete, and require only that you choose the **Paste At** command to finish the bounce and paste the new audio at the correct point in time. Remember, you will want to select two destination tracks if you are bouncing to stereo clipboard.

- Choose the **Bounce All to Mono Clipboard** or **Bounce All to Stereo Clipboard** command on the Process menu to execute the bounce.

This progress dialog will appear:

Mixing... [Stop]

When the bounce is complete, you will be returned to the Track window, and your originally-selected range will still be selected.

• Choose the **Paste At** command on the Edit menu to paste the newly-bounced region at the correct place in time. The Track window should now look something like this:

Important:

You have now completed the bounce. This new region contains a mix of all of the audio that was set to play in the selected range. **All volume levels, pan settings and automation envelopes are used to create the bounced file, so it will sound exactly like the original source tracks.** You are now free to delete the regions that were used to create the bounce. (In the case of this example, that would be the regions on tracks 1 and 2.) Or, you can simply move the tracks used as source for the bounce down to the Work Track area, where they will not play back. This is the best option, because it allows you to go back to your original source tracks if you desire.

Hint:

Bounce always bounces all of the play tracks in the selected time range, regardless of which track contains the selection. If you want to make sure that certain tracks are not used as source for a bounce, **mute those tracks**. Mute and solo are taken into account when you bounce to the clipboard. Also, set the automation status pop-up to play to include automation.

Virtual Mixing

A major advantage in using a Macintosh digital workstation is that you are not hindered by the limitations of the analog world. Analog mixers are physically limited to the number of tracks that can be played. DECK II does not do its mixing in real-time, so there is no limit to the amount of audio it can mix (other than hard disk space). Although you can only hear four tracks play at a time, if you master the process of creating work tracks and moving playlists, you can create an infinitely layered mix.

To use Virtual Mixing:

• Choose the Virtual Mix command form the Process menu.

Whenever you choose a Bounce or Mix command, DECK II will then mix work tracks as well as play tracks into the new file.

• Record your tracks as usual. Add the necessary automation to the new tracks.

• When you have filled up the play tracks, create work tracks by selecting the New Track command from the Process menu. Enter four in the dialog box.

You will now have four new Work Tracks that will serve as destination tracks for the playlists you have just recorded.

• Move the playlists to the Work Tracks. Use the playlist name pop-up to select Playlist 1 on the first work track, Playlist 2 on the second, etc. The process of moving playlists and using work tracks is explained at length in Chapter 5.

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Hint:	If you are planning to record many tracks, it is a good idea to rename the playlists. Using DECK II's default naming system (Playlist 1, Playlist 2, Playlist 3, etc.) will get confusing with many tracks. To rename a playlist, command-click on the playlist name. Type in the new name in the resulting dialog.

- Select New Playlist from the Playlist name pop-up on each of the play tracks.

- Repeat the above steps until you have recorded all of your material. When you are finished recording and editing, continue on to the next step, Final Mastering to a Mono or Stereo Disk File.

Important:	Using virtual mixing will quickly use up hard disk space. If your hard disk space is limited, you may be best served by bouncing tracks and compacting your Session. In either case, be sure you leave enough hard disk space for the final Mix to Disk process. You should allow about 10 MB per minute for the final mix.

Final Mastering to a Mono or Stereo Disk File

The last step in a recording project is generally the mastering process. During mastering, a final stereo mixdown of the recording is created. This stereo version is the 'master,' from which all distributed copies will be made. For this reason, the master must be the best possible copy of the final mix.

This chapter has taken you through the different steps in the synchro-nization, automation and mixing processes. Once your final mix is automated to your satisfaction, you are ready for the digital mastering process. In this process you will use DECK II to create a mono or stereo Sound Designer II, Audio Interchange (AIFF), or Sound Re-source soundfile on your hard disk. This soundfile will be an exact digital copy of the mixdown from which it is created, including all processing, level and pan settings and automation.

Remember, however, that there are some planning steps you will need to take before creating a digital master. If your Session plays back a synchronized MIDI file from OSC's METRO sequencer, the MIDI tracks will obviously not be included in a digital master until they have been digitally recorded. The easiest way to do this is a two step process: When all of your DECK II audio tracks are automated and ready for mastering, turn on the Virtual Mix command on the Process menu. Use the process described above in the Virtual Mixing section to free two play tracks. If you are limited by disk space, use the Process menu's Bounce All to Stereo Clipboard command to bounce the four play tracks to a final stereo image, then paste those bounced regions on tracks 1 and 2 (for example). Finally, mix your MIDI file into a stereo image at your mixing board, and record it in stereo onto the two remaining DECK tracks (tracks 3 and 4, for example). You now have your original audio and MIDI tracks in stereo audio form. Add any extra mixer automation you might need, and you're ready for the mastering.

To create a digital hard disk master of a Session:

• Open the Session you wish to master.

  Make sure that it plays back *exactly* as you wish the final mix file to sound, because the master will be an exact copy of the Session as you hear it. If you are using Virtual Mixing, be sure to audition each playlist in a play track before mixing. The Virtual Mix will NOT sound exactly like the Session, as it adds data to the mix from the work tracks, which cannot be heard.

• Choose the Track command on the Windows menu to open the Track window.

• **If you want to mix only a portion of the Session to disk**, select the range you wish to mix before you choose the Mix to Disk command.

Remember, all four playback tracks (and work tracks, if virtual mixing is enabled) are mixed to disk, even if you only select a range (or regions) on a single track. To remove tracks from the mix, **mute** those tracks. Be sure to select **play** on the automation status pop-up to mix the automation.

- **If you want to mix the entire Session** to disk, make sure that no audio range or region is selected.

You can use the Deselect command on the Edit menu to make sure that no audio is currently selected. Note that you can also choose the Select All command before you mix to disk to make sure that the entire Session file is mixed down.

- Choose the Mix to Disk command on the Process menu. This dialog appears:
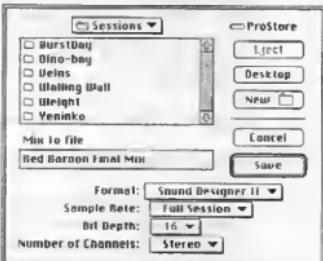
- Type in the name you wish for your master soundfile.

This will always default to the name of the Session followed by "Mix." It is probably a good idea to use this naming scheme, because it associates the master and the source Session, and prevents the possibility of replacing an important existing file.

- Select the destination folder for the master by using the standard selector box.

- Use the pop-up menus to choose the **Format, Sample Rate, Bit Depth,** and **Number of Channels** for your mix file.

The following options are available:

Format: Use this pop-up menu to choose the type of file you wish to create. The most common high-resolution file type is the **Sound Designer II** format. This is the native format used by DECK II, and it is supported by a great number of audio programs. If you are creating 16-bit stereo masters for CD mastering, this is generally the format of choice. The **Audio Interchange File Format** (AIFF) is another popular high-resolution audio format. There is no difference if quality of portability between Sound Designer II files and AIFF files. AIFF files are better for cross-platform file exchange, and were designed with this purpose in mind. AIFF files **do not** support the concept of audio regions, and cannot be used for direct audio recording in DECK II or Sound Designer II. For this reason, Sound Designer II files are generally suggested. **Sound Resource** files are Apple-standard format audio files which have the highest level of 'desktop integration.' 8-bit sound resource files are the standard used by your Macintosh system, and they can be played back through the Mac speaker directly from the desktop simply by double-clicking. Such 8-bit sound resources are also easily integrated into programs such as Macromedia's Director, or Adobe's Premier.

Sample Rate: Use this pop-up to select the sample rate you wish to have for your final audio master file. Generally speaking, higher sample rates are better because they offer higher fidelity. However, they also require more disk space. For the highest-fidelity results, set this pop-up to **Full Session**. This will mix down your audio at 44.1 kHz (or 48 kHz, depending on the sample rate of the Session). Setting this pop-up to **1/2 Session** will mix down and resample audio to 22.05 kHz (24 kHz). The **1/4 Session** will mix down and resample audio to 11.025 kHz (12 kHz). The lower the rate, the noisier the audio, so choose the lower rates with care.

Hint:

If you are mixing down a sound resource file with 8-bit sound for desktop playback, the **1/2 Session** setting will produce very good results.

Bit Depth: Use this pop-up menu to choose the audio bit-depth you wish for your audio master file when the audio is mixed. You may choose between 8-bit and 16-bit. Generally you will use the 8-bit format for playback from the desktop via the Mac speaker. (This format also requires less disk space and plays back more efficiently.) If you wish to create a true high-fidelity master, always choose 16-bit.

Number of Channels: Use this pop-up to choose whether you wish to create a mono or stereo master file. When you create a mono file, all stereo pan settings and automation is ignored.

Important: Apple's Sound Manager is capable of enhancing the playback capabilities of most Macintoshes. Forthcoming versions of the Apple Sound Manager will allow playback of 16-bit stereo AIFF or sound resource files directly from the Mac speaker (only 8 of the bits actually play). This new software, in tandem with your audio hardware manufacturer's output drivers, may make it possible to create and exchange movies containing 16-bit stereo files as the standard format. At the time this software was released, these enhancements are not yet available. 8-bit mono is still the most universal format for desktop audio and 16-bit stereo is always used in for high-fidelity mixes. Consult Apple and your audio hardware manufacturer for the most recent information.

• When you are ready, click on the Save button to create the digital mix file.

During the mixing process, you will see a progress dialog that shows you what is happening. After a minute or two the Track window will reappear, and the mastering process will be complete. When you quit or switch out of DECK II you will find a soundfile in the selected format located in your chosen destination folder. It will be an exact copy of the Session from which it came.

Important: DECK II uses the exact same set of routines to create a mix file that it uses to play back the source tracks. For this reason, you can be **absolutely** sure that the mix file will be a true copy of the Session's audio.

Once you have created a digital master of your Session, you are free to transfer it to a portable medium for duplication. If you are an Audio-media II, Sound Tools II or Pro Tools owner, you can transfer the master *digitally* to a DAT recorder. Then you can use the DAT cassette as a master for pressing CDs or albums. You can also data-back up the master files (or source files) to DAT using Digidesign's DAT/a pro-gram, or organize them for direct CD mastering using Digidesign's MasterList program. These are the highest-fidelity methods for backup and duplication, because there are *no analog steps after the original tracks are recorded.* If you are an original Audiomedia owner or AV user, you can rent time on a Sound Tools II or Pro Tools system for digital DAT transfer, or you can use Audiomedia or AV machine to play back your master for audio recording (to DAT or cassette). The latter is still a very high-fidelity alternative, because there is only 1 analog step after the original tracks are recorded. The MediaTime and NuMedia cards offer consumer optical digital output.

Mastering Your Final QuickTime Movie

If you are using DECK II as a QuickTime audio post-production tool, then the last step in your process is quite similar to the final audio mastering process described in the previous section. The main differ-ence is that you are creating a finished file (or files) that consist of desktop playable **picture, as well as** sound. The process of mixing down a final QuickTime movie (with audio) from the current Session is very simple, and only requires a single step.

To create a final **QuickTime movie with Session audio:**

- Open the Session that contains the audio and movie you wish to mix down.

  Make sure that the Session and its movie play back *exactly* as you wish the final product to look and sound. The exported movie will be an exact copy of the Session as you see and hear it.

- Choose the Export Movie command on the QuickTime menu. This dialog appears.:
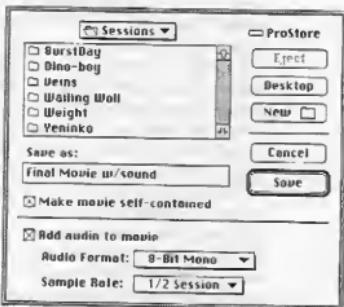
The Export Movie dialog allows you to create new QuickTime movies that contain or references 8- or 16-bit mono or stereo audio interchange file format (AIFF) audio tracks at a variety of sample rates. The exported movie contains all of the edited and audio with automation moves included. You can think of the Export Movie command as a Mix-to-disk command for picture and sound. It is usually the last step in the QuickTime audio post-production process, and the result can be played back on any Macintosh.

- Choose a destination folder and type in a name for the movie.

- Set your preferences for the format of the movie you wish to create. The following options are available:

Make movie self-contained: This option creates an entirely new, self-contained movie. The self-contained movie will consist of a single QuickTime (Movie Player) document that contains all picture and sound. According to QuickTime specifications, the sound and picture are mixed together, creating a movie that is fully transportable and plays efficiently (quickly). Note that a self contained movie will take a while for DECK II to create, because it requires an extra step ('flattening') which can be time consuming. Remember, a self-contained movie will generally be quite a large document.

Hint:

Make a movie self-contained when you want to create a single document for delivery. If you are simply performing test edits and mixdowns, do not make the movie self-contained. When the movie is not self-contained, a new, extremely small (typically around 30K) movie document is created. Like a DECK II Session, this document simply references the source sound and picture files. The Movie Info command in Apple's QuickTime Movie Player can always be used to determine which audio and picture files are used by a movie that is not self-contained.

Add audio to movie: This option determines whether the audio from the current DECK Session will be mixed, converted and added to the finished movie. You will generally want to have this option turned on. When it is turned off, a 'silent movie' document is created.

Audio Format: Use this pop-up menu to choose the audio bit-depth you wish for your audio mixdown file when the audio is mixed and the movie is exported. You may choose between 8-bit mono, 8-bit stereo, 16-bit mono or 16-bit stereo. Generally you will use the 8-bit mono format for playback from the desktop via the Mac speaker. (This format also requires less disk space and plays back more efficiently.) If you wish to create a high-fidelity master, choose 16-bit stereo. An AIFF soundfile is always created, unless you chose 'Make movie self-contained,' in which case the audio is placed directly into the movie picture data.

Important:

Apple's Sound Manager is capable of enhancing the playback capabilities of most Macintoshes. Forthcoming versions of the Apple Sound Manager will allow playback of 16-bit stereo AIFF files directly from the Mac speaker (only 8 of the bits actually play). This new software, in tandem with your audio hardware manufacturer's output drivers, may make it possible to create and exchange movies containing 16-bit stereo files as the standard format. At the time this software was released, these enhancements are not yet available, and 8-bit mono is still the most universal format for QuickTime audio. Consult Apple and audio hardware manufacturer for the most recent information.

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Sample Rate: Use this pop-up to select the sample rate you wish to have for your final QuickTime movie audio. Generally speaking, higher sample rates are better because they offer higher fidelity. However, they also require more disk space. For the highest-fidelity results, set this pop-up to **Full Session**. This will mix down your audio at 44.1 kHz (or 48 kHz, depending on the sample rate of the Session). Setting this pop-up to **1/2 Session** will mix down and resample audio to 22.05 kHz (24 kHz). The **1/4 Session** will mix down and resample audio to 11.025 kHz (12 kHz). The lower the rate, the noisier the audio, so choose the lower rates with care.

Hint: If you are mixing down a QuickTime movie with 8-bit sound for desktop playback, the **1/2 Session** setting will produce very good results.

• Click on the Save button to export the movie.

After a short while, you will be returned to the DECK II Track window, and you will find your new QuickTime movie in the destination folder you specified.

Note: Remember, only one QuickTime movie may be opened at any time. To close the current movie, use the Dispose Movie command. This will allow you to import a different movie.

Editing Audio Regions in Sound Designer II

If you own Digidesign NuBus cards, you can use Digidesign's destructive visual sample editor, Sound Designer II to edit all DECK audio regions and tracks. DECK II is designed to allow you to run Sound Designer II and DECK at the same time, and DECK even offers a command that automatically switches you into Sound Designer II and selects the audio region you had selected in DECK. Once you have opened an audio file in Sound Designer II, you can make any destructive changes you desire, including 'click and pop' repair, destructive parametric and graphic EQ, dynamics processing, and even noise reduction.

To set Sound Designer II as your sound editor:

• Choose a the **General** command on the File menu's Preferences submenu. This dialog appears:
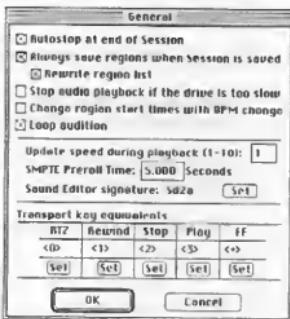
• Click on the **Set** button to the right of "Sound Editor signature." This dialog appears:
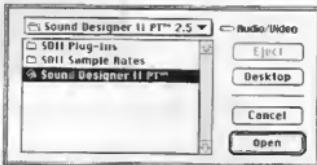
• Use this dialog to locate your copy of Sound Designer II.

• Select Sound Designer II and click on the Open button.

After a moment you will be returned to the General preferences dialog. You will now see "SD2a" set as the sound editor signature. You have now set up Sound Designer II as your sound editor. Note that you can choose **any** sound editing program as your sound editor using this same process.

To edit a DECK II audio region in Sound Designer II automatically:

- Make sure you have selected Sound Designer II as your sound editor using the process described above.

- Choose the Track command on the Windows menu to bring the Track window to the front.

- Click on the edit mode button to switch to Object mode:

- Click to select the audio region you wish to edit in Sound Designer II. It should look like this:
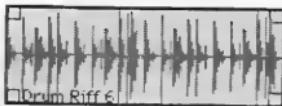
- Choose the Launch Editor command on the Process menu.

You will immediately be launched into Sound Designer II and the file that contains the selected region will be opened with the regions highlighted in black. You can now perform any edit you desire, and when you save the change and switch back to DECK, the changed soundfile will play back.

WARNING:	Edit your audio regions with care if you plan to play them from DECK again. If you destructively delete a waveform range or change the length of the file, you will change the overall timing of the DECK playlist(s), and your Track window arrangement may be permanently altered.
Note:	If you install an Sound Designer II EQ or dynamics setting for playback, that EQ *will not* appear for playback in DECK II.
Note:	When you change a waveform in Sound Designer II, remember that the DECK II waveform will not **visually** reflect the change until the next time the Session file is opened. Rest assured, however, that DECK II will always **play back** the changed audio data.

This concludes the Synchronization, Mixing and Mastering chapter of this manual. For more information about specific DECK II windows, command and options, see the Reference chapter.

7

EIGHT

DECK II REFERENCE

Introduction

This chapter of the DECK II manual is devoted to explaining all of DECK II's windows, screen controls and indicators, and each of the menu commands found on DECK II's seven menus. If you have a specific question about a DECK II window, command, control, or function, this chapter is for you. If you are curious about a specific task, or you want to learn about DECK II in general, then you should read through the previous chapters of this manual.

The DECK II Windows

All of DECK II's recording, mixing, automation, and mapping functions are available from the DECK II Mixer and Track windows. The **Mixer window** is quite similar to original DECK's portastudio interface. You can use the Mixer window to accomplish all basic audio tasks, including recording, overdubbing, synchronizing, mixing, and automating. If you simply wish to use DECK II as a 4-track portastudio, then this window and the Transport window are the only windows you will need.

The DECK II **Track window** really represents the true power of DECK II. It contains the tools that turn DECK II into a full-featured digital audio workstation. You can use the Track window to accomplish most of the functions that are available from the Mixer window, but in addition you an view and edit your audio waveform data. The Track window contains tools that allow you to record, cut, slice, slip, spot, bounce, place and automate any audio file or region. It is important to note that Track window edits are *non-destructive*, so no edit ever destroys data, and all edits can be undone. If you intend to use DECK II to record and edit audio, or to place and synchronize effects, music, or dialog, the Track window will be your tool.

DECK II also offers a **Transport window** that you can use to control audio playback and recording, a **MIDI window** that you can use to

import a standard MIDI file to hear it play back with your Session, a **Library window** which allows you to easily view your source material, and a **QuickTime window**, which allows you to load and play a QuickTime movie in sync with your digital audio. These windows are quite simple, and they are also explained in this chapter.

The Mixer Window

Although the DECK II Mixer window generally looks and acts like a portable four-track recorder, it is much more powerful, and in some ways it is also more complex. Because DECK II is a hard disk recorder, and it offers full digital processing and mixdown automation, it cannot mimic analog recorders in every way. Read through this section to understand the different Mixer window controls and commands. Then proceed to the previous chapters of this manual, for in-depth information about using those controls and commands.

This is the DECK II Mixer window:

Track Number   Mixer Module

Track Input Selector

Track Automation Pop-up

Track Output Pan Selector

Track Pan Fader

Track Solo Button

Track Solo Button

Track Record-enable Button

Track Volume Fader

Track Playlist Selection Pop-up

Track VU Meter   Track Clip Light
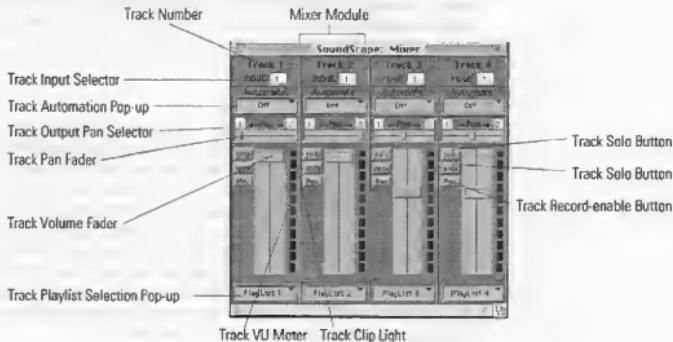
Track 1

Track Number: DECK II's mixer has four track modules – one for each of the four playback tracks. This label at the top of each mixer module tells you which track you are looking at.

Hint:

Remember, DECK II lets you work with an infinite number of audio tracks, but only the top four will play. You can move any tracks to these top four tracks using the Track Playlist Selection pop-up (explained below) or by dragging them in the Track window.

Input 1

Track Input Selector: This numeric selector allows you to choose which of the audio inputs on your hardware will supply signal to the current track for recording. To set this number, just click and drag on the selector. Upward or leftward motion will increase the number, while downward or rightward motion will decrease it.

Important:

Each enabled record track must be set to a unique input. Multiple tracks cannot record from the same input.

Hint:

As with all selectors in DECK II, you can hold down the command key and click on this number. This allows you to edit the value as text by typing from the keyboard.

Track Automation Pop-up: The track automation pop-up brings up a menu that looks like this:

Off
Play
Record Volume
Record Pan
Record All
Erase Volume
Erase Pan
Erase All

Track Automation pop-up

You will use this pop-up to record, play back, and erase real-time volume and pan automation on this track. (If you wish to draw automation envelopes for volume and pan, see the Track window, explained later in this chapter.) The Track Automation pop-up offers these choices:

Off:	Mute all automation on this track.
Play:	Play all automation on this track.
Record Volume:	Enable real-time volume automation recording on this track.
Record Pan:	Enable real-time pan automation recording on this track.
Record All:	Enable real-time volume and pan automation recording on this track.
Erase Volume:	Erase all volume automation on this track.
Erase Pan:	Erase all pan automation on this track.
Erase All:	Erase all automation on this track.

Use these settings to enable automation recording, or to erase existing automation data. Automation moves can be generated by moving the faders, or by clicking on DECK II's Mixer State buttons in the Transport window. Remember, automation recording is quite similar to audio recording. You will need to click on the Transport window's Record and Play buttons to record actual automation moves, and all loop and punch-in functions apply to automation as well as audio. For more information about recording and editing automation see Chapters 5 and 6 of this manual.

Hint: If you are recording real-time automation moves, it is possible to use the mouse, but the mouse only allows you to adjust one control at a time. You will achieve much better results if you use a MIDI fader controller (such as J. L. Cooper's FaderMaster) to control your DECK II track faders. For more information, see the MIDI Map Faders command on the Options menu.

Important: DECK II records your fader motions at MIDI resolution, however during playback these values are interpolated up to **24-bit** resolution (over 16 million values between 0dB attenuation and full attenuation). Although your DECK II screen faders may appear to move in a 'jumpy'

fashion, be assured that this is only your Mac screen updating. Audio always takes precedence and is always adjusted in a smooth manner.

1 ←Pan→ 2

Track Output Pan Selectors: These selectors allow you to choose the output pair through which the track's audio will play. The left-hand number represents the left output channel and the right-hand number represents the right output channel. The pan fader allows you to place and move the track's audio smoothly between these two outputs. To set the Pan Selectors, just click and drag on the selector. Upward or leftward motion will increase the number, while downward or rightward motion will decrease it.

Important: The output pan settings cannot be changed on Audiomedia or MediaTime cards, because these cards have only two outputs.

Track Pan Fader: This control allows you to adjust the placement of the track's audio in the stereo field. By moving the fader left and right, you will hear the track's audio move in a corresponding fashion within the stereo image. Remember, this only functions correctly if you have routed your audio card or interface's outputs to the left and right channels of an amplification system.

Track Volume Fader: This fader has two discrete functions: When you are simply playing back a track of audio, the track volume fader controls the overall volume level of the track. When the fader is all the way up, the track is at its loudest. When it is all the way down, the track will be silent. When you have the track record-enabled (with the track Rec button highlighted), the track volume fader controls the *monitor* level of the input signal. Remember, the monitor level setting does not change the actual level of the track's recording, it only adjusts the listening level of that signal.

Important: Sound Tools II and Pro Tools systems have no input level setting. You have to adjust the level of the source signal to change the actual recording level of the signal. The Audiomedia and MediaTime cards have a software input level setting, which you can adjust using the Input Level submenu on the Options menu.

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Whenever you move a fader in DECK II, you will see that fader's value
                          displayed in the Transport window's value indicator box. If you want
                          to enter a specific level for a DECK II fader, hold down the command
                          key and click on that fader. A dialog will appear, allowing you to
                          enter the exact value you desire.

Hint: If you turn a track all the way up and it still seems to be too quiet
                          compared to your other tracks, try selecting that track in the Track
                          window and choosing the Normalize command. This will increase the
                          overall volume of the track to its maximum. For more information, see
                          the Destructive Effects submenu on the Process menu.

solo   **Track Solo Button:** Click on a track's solo button when you want to
                          hear that track alone. Click it again to hear all tracks. Note that
                          multiple tracks may be soloed simultaneously, and that track solo
                          always takes precedence over track mute. (In other words, a track that
                          is both muted and soloed will play back.)

mute   **Track Mute Button:** Click on a track's mute button when you want to
                          turn off that track's playback. Click it again to turn the track back on.
                          Note that multiple tracks may be muted simultaneously, and that track
                          solo always takes precedence over track mute.

Rec   **Track Record Enable Button:** Use a track's Rec button to record-
                          enable that track. You cannot record audio onto a track unless this
                          button is highlighted. When you click on this button, you will imme-
                          diately be able to hear the audio that is coming in the input selected in
                          the track's input selector. Increase the incoming signal level at the
                          source (or, for Audiomedia/MediaTime cards, you can use the Option
                          menu's Input Level command) until the track VU meter shows a
                          healthy signal level. You can use the track volume fader to adjust the
                          monitor level of the incoming signal, but remember this does not
                          change the level of the recorded signal. Once you have a healthy level,
                          you can record the incoming signal by clicking on the Transport
                          window's Record and Play buttons.

Hint: Remember that the track volume fader controls both the level of the
                          track's existing audio and the monitor level of the incoming signal.
                          When the track Rec button is highlighted, you are adjusting the

monitor level of the incoming signal. When it is not highlighted, you are adjusting the level of the track's existing audio. Switch back and forth to match monitor levels on punch-in recording passes.

Track VU Meter: A track's VU meter serves two purposes. When the track is **not** record-enabled, the meter shows you the amplitude (volume) level of the audio signal on that track. Remember that the VU levels are shown pre-fader, which means that VU level indicates the amplitude of the track regardless of the track's fader setting. This allows you to see where you have signal, even if that signal is muted or fully attenuated. **When the track is record-enabled,** the meter shows your amplitude (volume) level of **the incoming audio signal** present at the selected audio input. In this case, the track VU meter serves a very important purpose. You must use it to adjust the incoming signal to the highest possible level without clipping. If the signal is too high, the **Track Clip Light** will turn on. Click on the Clip Light to turn it off, then adjust your signal. One of the keys to successful digital recording is careful adjustment of the input signal. Too low a signal will result in a noisy recording (poor signal-to-noise ratio). Too high a signal will clip, causing digital distortion.

Track Playlist Selection pop-up: Use this pop-up to select which or your playlists is cued to play on the track module. To do this, simply click and hold on this pop-up, and then drag to the desired playlist and let go of the mouse. The selected playlist will be moved to the current track module, and the previously-loaded playlist will be swapped to occupy its old place. Note that automation data is associated with the track position, and will remain on the track with the newly selected playlist.

The Track Window

The DECK II Track window is the portion of the program that truly differentiates DECK from an analog portastudio. The Track window offers a host of tools for recording, editing, defining, slipping and otherwise manipulating audio. Most of DECK II's Track window edits

are non-destructive. This means that your edits never erase existing audio, and they can always be undone. Because DECK II uses the concept of 'playlists' to organize audio playback, the Track window offers a number of other important benefits. The playlist architecture allows you to copy and paste any audio **without requiring that the audio data be duplicated.** For example, if you have a two-bar drum riff, and you paste 1000 copies of it onto a DECK II track, those copies will occupy almost no hard disk space. DECK II accomplishes this by playing the same audio data over and over again. This means that you can create very long, evolved compositions and arrangements in DECK II even with a minimum of disk space – and this is only one of the many benefits afforded by the new Track window.

This is what the DECK II Track window looks like:
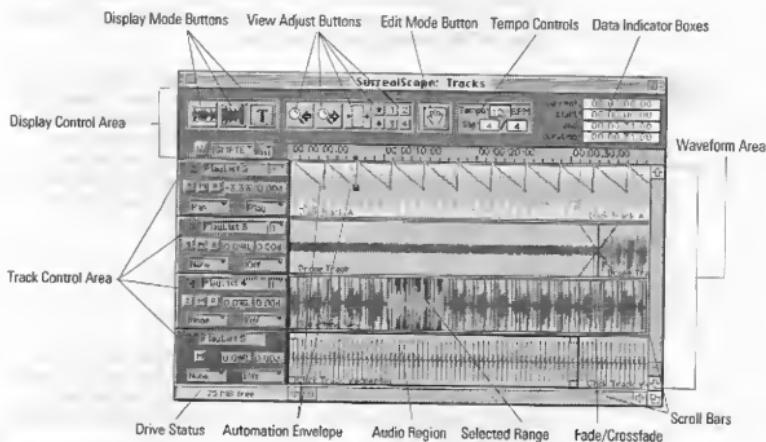
Display Control Area: This area of the Track window contains all of the controls you will use to adjust the track display, change edit modes, and alter the Session's tempo. The specific functions of the buttons, selectors and indicators in this area of the window are explained over the next few pages.

Display Mode Buttons: The DECK II Track window contains three display mode buttons. These buttons toggle certain general waveform display characteristics on and off. Here is a list of these buttons, and explanations of what they do:

Track Size Button: This button toggles all tracks in the track window between three display sizes. The tall display can comfortably show two tracks on a 13"/14" monitor. This display is useful for locating zero points in your audio. The medium display can show six tracks and is useful for most of your editing tasks. The short display can show up to 24 tracks at once, which is particularly useful for editing complex material.

Waveform Draw Button: This button toggles the drawing of waveforms on and off. When the waveforms are turned off, all audio regions are drawn as simple filled boxes. This is can be quite helpful if you are arranging existing audio entities, because it greatly decreases screen redraw time and 'unclutters' the display.

Hint:

When you have waveform drawing turned off, DECK II will not take any time to create waveform overviews after recording, so general operations will often execute more quickly.

Track Text Button: This button toggles the drawing of region name text on and off. When the region names are turned off, all audio regions are drawn with no labels. This is can be useful if you are editing region lengths based on waveform envelopes, because it 'unclutters' the display and makes it easier to concentrate on waveform data.

View Adjust Buttons: The Track window offers five types of view adjustment buttons. You will use these buttons to adjust the way that

the waveforms are displayed in the waveform area. Generally, these buttons adjust the amount of time you see horizontally in the waveform area. In many ways they are the most important buttons in the Track window, because you will need to use them to navigate around your audio regions and soundfiles. Here is a list of these buttons, and explanations of what they do:

Contract Display Button (Zoom Out): Click once on this icon to adjust the display to show more time. You can think of this as a 'demagnify' tool that will show you more of your entire Session.

Hold down the command key and click on this icon to zoom all the way out and view the complete Session. Hold down the Option key and click here to zoom out 2X and hold down the Option and Shift keys to zoom out 4x.

Expand Display Button (Zoom In): Click once on this icon to adjust the display to show less time. You can think of this as a magnifying glass that will zoom in at the left side of the display to show you greater waveform detail. You will often want to zoom in using this tool when you wish to make subtle evaluations and edits.

Hold down the command key and click on this icon to zoom all the way in to the sample/subframe level. Hold down the Option key and click here to zoom in 2X and hold down the Option and Shift keys to zoom in 4x.

Fit Selection Icon: This icon automatically expands or contracts the display so that the current selection fills the screen. This is true whether the selection is a region or a waveform range. This tool makes it possible to view rapidly any specific audio range, region, transition or event.

Press the "Z" key on your keyboard with the mouse button still down after making a selection in the Track Window. This will automatically zoom the selection to fill the screen.

Hint: You can use the Selection Tools commands on the Options menu to

snap the display to various selection-based positions without changing the zoom level (display resolution).

The Axis Resolution pop-up is also a very useful tool for adjusting the waveform display to specific zoom levels. It is explained later in this chapter.

Waveform Expand/Contract Buttons: Use these buttons to manipulate the vertical display resolution of the waveforms. The up arrow expands the waveform display for viewing audio recorded at low levels, or for finding the zero points of a waveform. The down button returns the display to normal resolution.

The "[" and "]" keys can be used instead of the up and down arrow buttons.

View Memory Buttons: DECK II offers four separate view memories which you can use to store the current state of the Track window's waveform area. Each view memory saves the current view resolution, position, and selected range or insertion point. To record the current view into one of the view memories, just hold down the command key and click on that view memory number. To recall the stored view, just click on that view memory button at any time. The view memories are particularly useful for storing waveform views that you plan to use often, or locations and resolutions of problem areas. They also make it possible to store a number of potential loops for later recall.

Edit Mode Button: Use the Edit mode button to switch between Object Select (Hand) and Range Select (Waveform) mode. **Object Select** allows you select, cut, copy, paste, redefine, process and otherwise manipulate entire audio regions as units. It is most useful for arrangement. **Range Select** mode allows you to select waveform ranges within any audio region. It is most useful for editing of components before arrangement begins (creation of loops, etc.). Click on this button to switch between modes.

Use the tilde key (`) to switch between Object and Range Select modes.
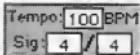
Tempo Controls: DECK II's tempo controls do not change the speed of audio playback. These controls allow you to set the base tempo and time signature that will be used by DECK to display and edit audio in Beat mode. These settings make it possible to set up Beat mode to snap edits and selections to the desired bar and beat lengths of positions. If you are using METRO as your sequencer, the tempo setting will automatically be set by METRO, and any changes made to the tempo will be reflected in METRO.
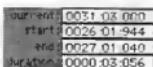
Data Indicator Boxes: The Track window data indicator boxes show you the pertinent information about the current mouse position or selection. Whenever the Track window is active, this box displays the current time (under the hot-spot of the cursor), and the start time, end time and duration of the selected object or range. All times are indicated in the selected axis units. (For more information, see the Axis Units pop-up.)

Hint:

Since the 'current' time shown in the data indicator box is the time directly under the cursor, you can place (spot) a specific point in any region to the exact frame or beat by grabbing the desired region at the hit-point of the waveform and dragging the region until the current time indicates the frame or beat you want. This spotting method makes it possible to spot sound by points other than region start and end points, without requiring a special spot mode.

Axis Units Pop-up: This pop-up menu allows you to select the time units by which you will be editing. The selected time units appear at on the horizontal axis directly above the waveform area of the window. You may choose between the following units: Sample, Second, SMPTE and Beat. **Sample** displays the sample number in relation to the start of the Session (there are 44,100 or 48,000 samples per second, depending on your Session sample rate). **Second** displays all times in wall-clock time. **SMPTE** displays all times by SMPTE timecode frame, which is useful for synchronization to picture or external tape devices. (See the SMPTE Format submenu on the Options menu to select your SMPTE frame format.) **Beat** is generally used for music composition, and is particularly useful when you are using DECK II in sync with a MIDI sequencer.

Axis Resolution Pop-up: This pop-up allows you to snap the waveform display to a number of different view resolutions. The available resolutions are always natural subunits of the master axis units. (For example, Second offers Minute, Second, Centisecond, Millisecond, and Sample as its resolutions.) When you choose one of these resolutions, the waveform display is immediately adjusted so that you may work at the selected zoom level. Since the selected range is never deselected when the axis resolution is changed, you can easily change resolutions to zoom in for fine edits of waveform ranges selected while you are zoomed out. For example, you can select a waveform range at the minute resolution, and switch to the millisecond resolution to make fine-adjust the size of the range. Note that the waveform display can be adjusted to a great number of resolutions. You can always use the Axis Resolution pop-up to make sure you are the view resolution is set to usable units. **This will assure you that DECK II's smart grid will snap to your desired units (if you have it turned on).**

Hint:

Remember you can use the Selection Tools submenu on the Options menu to pop the waveform display to show specific areas (the start or end of the current selection, for example) with a single command, regardless of the view resolution.

Snap to Grid icon: This icon allows you to turn DECK II's grid on and off. DECK II's grid is a 'smart grid.' That means that the grid units auto-adjust to match the current axis resolution. For example, when the axis resolution is set to bars, the grid is one bar. When it is set to quarter notes, the grid is one quarter note. The grid is particularly useful for music or sound arrangement according to specific tempo.

Time Axis: This area of the waveform display indicates the time frame of the waveforms in the waveform area. The time axis is always shown in the units selected on the Axis Units pop-up, and the axis is constantly adjusted as the magnification level (view resolution) is changed.
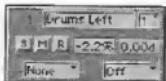
Track Control Area: You will use this area to control the automation, playback and recording of playlists on an individual track. The specific functions of the buttons, selectors and indicators in this area of the window are explained over the next few pages.

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Track Label/Drag Area: This area of each track in the track window lists the number of the current track. **Remember, only tracks 1-4 will play.** All other tracks are work tracks. To move any track to another track position, select the track by clicking in this area. Once the track is highlighted, you can then click and drag it up or down to its new position. This is one way to select which tracks will play.

Hint: You may wish to view the tracks in short mode (using the Track Size button) when you are moving them from track position to track position. This allows you to view more tracks at one time.

Track Playlist Pop-up: This area shows you the name of the track (playlist) that is currently loaded in the indicated track position. You may change the playlist on a track by pressing down on the pop-up and selecting a new playlist. You may also change the name of the current playlist by command-clicking in this area.

Track Input Selector Pop-up: This pop-up menu allows you to choose which of the audio inputs on your hardware will supply signal to the current track for recording. Think of this control as a software patchbay that lets you select the input from which you will be recording. To set the input number, just click and drag on the pop-up menu, and let go of the mouse when the correct input is selected.

Track Mute and Solo Buttons: Click on a track's solo button when you want to hear that track alone. Click it again to hear all tracks. Note that multiple tracks may be soloed simultaneously, and that track solo always takes precedence over track mute. (In other words, a track that is both muted and soloed will play back.) **Click on a track's mute button** when you want to turn off that track's playback. Click it again to hear turn the track back on. Note that multiple tracks may be muted simultaneously, and that track solo always takes precedence over track mute.

Track Record Enable Button: Use a track's Rec button to record-enable that track. You cannot record audio onto a track unless this button is highlighted. When you click on this button, you will immediately be able to hear the audio that is coming in the input selected in

the track's input selector. Increase the incoming signal level at the source (or, for AV machines and Audiomedia/MediaTime cards, you can use the Option menu's Input Level command) until the Mixer window's track VU meter shows a healthy signal level. You can use the track volume fader to adjust the monitor level of the incoming signal, but remember this does not change the level of the recorded signal. Once you have a healthy level, you can record the incoming signal by clicking on the Transport window's Record and Play buttons.

Hint: When you are recording audio, you will need to open the Mixer window to set levels and view incoming signal VU meters. For more information, see the Mixer window information earlier in the chapter.

`0.0%L 0.00d`   **Track Level and Pan Indicators:** Use these indicators to monitor level and pan values while editing automation. The indicators also appear in the Transport window.

`None ▼`   **Track Automation View Pop-up:** This pop-up menu allows you to view, create and edit automation envelopes in the waveform area of the Track window. When this pop-up is set to None, then the track shows and edits only waveform information. When **Pan** is selected, a pan envelope is shown (if pan automation exists). When a pan envelope is shown, up represents left-channel placement and down represents right-channel placement. When **Volume** is selected, a volume envelope is shown (if volume automation exists). When a volume envelope is shown, up represents increase in volume and down represents decrease in volume. When you are editing automation envelopes, you may perform most editing commands such as cut, copy, and paste as well as many of the editing shortcuts listed at the end of this chapter. Object (hand) mode allows you create and adjust one or more individual breakpoints, and Range (waveform) mode allows you to edit envelope ranges.

Shortcut: Hold down the Option key while selecting an automation view to set all tracks to the same view.

Hint: To create new automation breakpoints/envelopes, select Object (hand) mode and set the track to view the correct automation type. Then hold

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down the command key and click anywhere on the waveform to create an automation point. Continue command clicking to create more points, or click and drag on points to move them. To delete existing points, hold down the option key and click on a point. You may also delete points by selecting a group of points in Object mode or an envelope range in Range mode, and pressing the delete key.

Track Automation Status Pop-up: The track automation status pop-up functions in exactly the same fashion as the one explained at length under the Mixer window earlier in this chapter. For information about real-time recording of fader motion, see that section of the manual. When you are editing automation envelopes in the Track window, this pop-up is most useful for turning automation on or off by track, and for erasing all of the automation on a track. This pop-up must be set to "Play" during the mixing process to ensure that your automation data is calculated into the new file.

Shortcut: Hold down the Option key while selecting the automation status to set all four tracks to the same status.

Important: DECK II generates fader motions at 24-bit resolution (over 16 million possible values between 0dB attenuation and full attenuation). Although your DECK II screen faders may appear to move in a 'jumpy' fashion, be assured that this is only your Mac screen updating. **Audio always takes precedence and is always adjusted in a smooth manner.**
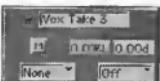
Work Tracks: DECK II allows you to play back four tracks of audio at any time, but the Track window lets you create an unlimited number of work tracks. A Work Track functions just like a Play Track except that you cannot hear audio played back from a Work Track. This allows you to use the Work Tracks to create a "Virtual Mix." When you have the Virtual Mix command enabled, DECK II will mix Work Tracks as well as Play Tracks. When using this feature, be sure to have your automation set to "Play" and to mute Work Tracks that you don't want mixed, as you cannot hear the entire Session before you perform a Virtual Mix.

To set a work track to play, just select it by touching the track Label/Drag Area and then dragging the work track up into one of the top

four positions. You can also accomplish this by using the Track Playlist Selection pop-up to select the work track playlist you wish move to a play track.

Waveform Area: This area of the window contains the actual tracks of audio data which you record or add (place). To the right of each track's control area is the actual waveform data that makes up that track's playlist.

Selected Range: The currently selected range is always highlighted so it is easy to see. This is the waveform range that will be used for any selected edits (such as cut, or paste). You can recognize a waveform range selection, because it shows no thick outline or region definition tabs. Select a range by switching to Range (waveform) mode and dragging the cursor over any waveform area on one or more tracks. Use the shift key to extend or contract your selection to a new point. Waveform selection is very useful for testing out potential regions and loops, and for selecting audio to be deleted from the Session.

Selected Object: Selected objects (regions) look different than selected waveform ranges. A selected object has a thick black outline, and four region definition tabs. Select objects when you wish to move them, copy them, change their size, or process them. Use the shift key to select multiple regions. You may select non-contiguous regions, even if they are on different tracks. Object selection is particularly useful for arrangement and spotting tasks, because it simplifies the process of selecting and moving multiple regions.

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Region Definition Tabs: These tabs are only present when an audio region is selected in Object mode. All regions selected as objects will have these definition tabs. Use these tabs to change the defined length of the region by dragging them to the left or right. Remember that an audio region is like a window into an audio file. By dragging the region definition tabs, you are actually revealing or covering up other waveform data in the source audio file. For this reason, you can never make an audio region larger than it was originally at the time it was created.

Shortcut:	Holding down the Option key while resizing a region will constrain the size to the next region boundary. Also, you can "trim" multiple regions at the same time by selecting a group of regions and using the region definition tab on one region to resize all selected regions.
	Fade/Crossfade Symbol: DECK II offers a variety of audio fades and crossfades. A fade is the process of increasing a region's volume from zero to full (fade in) or from full to zero (fade out). A crossfade is the process of fading out one region while you smoothly fade in the next region. The simplest way to create a fade or crossfade is to select the start or end of the waveform range that should be faded (or select across the boundary between two touching regions for a crossfade), and then choose the Process menu's Fade Selection command. For more information, see the section on fades and crossfades in the Visual Waveform Editing chapter (Chapter 5) of this manual.
Important:	A crossfade often requires that there is audio data before the beginning or after the end of the selected region. DECK II will warn you if there is no data available, and will allow you to continue.
	Automation Envelope: An automation envelope looks like a very simple thick line that travels horizontally on top of an existing waveform or space in the waveform area. The waveform display is grayed out, as you cannot edit automation and audio at the same time. DECK II offers two types of editable automation envelopes on each track: a volume envelope and a pan envelope. All breakpoints on any envelope can be edited simply by clicking and dragging on those points. For more information, see the automation information in the Synchronizing, Mixing and Mastering chapter of this manual.
Shortcut:	Click on an automation envelope in Object mode while holding the control key down to bring up a dialog which allows you to enter a precise level or pan setting
	Free Drive Space Indicator: This indicator shows you the amount of unused drive space on the hard disk that contains the current Session. Remember, you can usually free up more drive space by choosing the Compact Session command on the File menu. Remember, however,

that Compact Session is a destructive process. Make sure you understand what it does before you use it.

Track Window Scroll Bars: The vertical scroll bar will scroll to show you each of your tracks. The horizontal scroll bar scrolls the waveforms along the time axis. Command-clicking on the horizontal scroll bar moves the waveforms a half page. You can scroll the Track window to the current Transport counter time by Command-clicking in the Transport's Time Counter. The Track window will also scroll to the current time after playback if you have the Scroll after Play preference turned on.

Track Window Key Commands: Many of the powerful editing features in the DECK II Track window are available only from command keys. By using command keys, DECK makes it possible to execute and modify all kinds of edits without requiring a number of different modes. Here is a list of the key commands, and what they do:

Key Command	Audio Editing	Automation Editing
Shift+Drag	When dragging regions, constrain the region to its start time. This is very useful for editing regions and keeping them in phase with their original positions.	In Object mode, constrains movement horizontally.
Control+Drag	When dragging regions, hold down the control key before you let go of the mouse to slide all regions after the current region later in time by exactly the length of the current region (shove).	In Object mode, constrains movement vertically.

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Option+drag	When dragging regions, hold down the option key before you let go of the mouse to drag a copy of the current region and leave the original in its place.	
Command+drag	When dragging regions, hold down the command key before you let go of the mouse to 'stick' the region onto the end of the previous region on the track (shuffle).	
Arrow Keys	In Object mode, these keys shift the current selection in the direction of the arrow by one region. In Range mode, these keys shift the current selection in the direction of the arrow by one grid unit.	In Object mode, these keys shift the current selection in the direction of the arrow by one envemope. In Range mode, these keys shift the current selection in the direction of the arrow by one grid unit.
Shift+arrow keys	In Range mode, hold down the shift key and press the right or left arrow button to expand the selected range later or earlier by one grid unit.	In Range mode, hold down the shift key and press the right or left arrow button to expand the selected range later or earlier by one grid unit.
Command+ arrow keys	Physically move the selected object or range left or right one unit, up or down one track.	Physically move the selected envelope(s) or range left or right one unit.
Command+ Option+ arrow keys	Creat a copy of the selected object or range left or right one unit, up or down one track.	

Command+ Control+ arrow keys	Physically move the selected object or range left or right one unit, up or down one track AND push all later regins on the destination track later by yhe length of the region or range.	
+ key	Nudge the selected range or region later by one grid unit. (You may set the nudge time using the Set Nudge Time command on the Options menu)	Nudge the selected range or region later by one grid unit.
- key	Nudge the selected range or region earlier by one grid unit.	Nudge the selected range or region earlier by one grid unit.
Command+click		Adds new automation envelope.
Control+ Command+click		Adds new automation envelope with same vertical value as the previous one.
	General	
~ key	Switch between Object and Range mode	
c key	Enter current selection start and end times in Transport window begin and end time fields and turn looping on.	
s key + mouse down in track	Scrubs individual track. Cursor arrow indicates direction of scrub.	
Option + s key + mouse down in track	Scrubs all tracks. Cursor arrow indicates direction of scrub.	
Shift + s key + mouse down in track	Scrubs individual track within the range of the current selection. Cursor arrow indicates direction of scrub.	

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Shift +a key +click	In Range Mode, extends selection to nearest region boundary to the mouse click.
mouse down + z key	Automatically zooms current selection to fit window.

The Transport Window

The Transport window is the window you will use to control most aspects of playback, including scrub-from-disk loop/rehearse mode, automated punch in, pitch control, autolocation times and the storage of mixer states (snapshots). The Transport does not have to be the active (frontmost) window for the Transport buttons to function.

This is the DECK II Transport window:

Master 'Tape' Counter   Slide Locator

Control Value Indicator
Status Indicator
Transport Controls
Punch Mode Button
Loop Mode Button

Begin and End Time Counters   Pitch Control   Autolocation Buttons   Mixer State Buttons

Note:

The Transport window has three possible sizes. Click on the window's zoom box to adjust its size.

`00:01:57:06`   **Master 'Tape' Counter:** The DECK II master 'tape' counter is a time indicator that serves two purposes. It shows you your current position in the Session, and it allows you to click and drag on it in order to

scrub audio playback in either direction for exact location (for auto-
mated punch-in/punch-out marking, for example). When you first
start up DECK II, the default time units are set to SMPTE frame (29.97
fps non-drop). To choose a different time unit (such as seconds, or
beats), use the Axis Units Pop-up in the Track window. If you wish to
set the Session start time to a non-zero value, see the *SMPTE Start Time*
command on the Options menu.

Shortcut: Command-click on the Master Tape Counter to automatically scroll the
Track window to the Master Tape time. The Track window will
automatically scroll after playback stops if you have the Scroll after
Play preference turned on (see the General preferences in the File
menu section of this manual for more information.)

Transport Buttons: The transport buttons themselves offer no sur-
prises. They function very similarly to those on an analog tape deck.
The buttons are, from right to left, return-to-zero, rewind, stop, play,
fast forward, and record. These buttons function as you would expect,
however you should note that rewind-to-zero occurs instantaneously,
and that rewind and fast forward function more like an audio CD
player – they 'chunk-skip' ahead or back in the audio without increas-
ing or decreasing the pitch of the audio source.

It is also important to realize that the normal function of the record
button is a 'non-destructive' (constructive) record. This means that the
punching in of new audio over old *will not erase* the original audio.
This is a safer recording method, and it allows you to go back to a
previous version if you don't like a punch-in.

Shortcut: Key equivalents for the transport buttons are selected in the General
Preferences dialog (see the Preferences command on the File menu).
Hold down the shift key and hit the space bar (default key equivalent
for play) to begin playing from the last counter position, not the
current one.

Note: For information about external control of the transport buttons, see
MIDI Map Mode, in the Chapter 4 of this manual. Also see the MIDI
Map Faders command on the Option menu, explained later in this
chapter.

Slide Locator: The slide locator offers you an easy way to locate quickly to any part of the current Session. Click and drag on the horizontal slider to move around in the recording. As you drag the slider, the tape counter is updated to show you the current time. When you let go, you will be ready to begin playback or recording from that point.

The slide locator is useful for general movement around the current Session, but the autolocation buttons, explained later in this chapter, provide a quicker and more accurate method for exact time location.

Punch Mode Button: The punch mode button toggles DECK II record functions into punch mode. When DECK II is in punch mode, the 'begin' counter sets the punch-in point and the 'end' counter sets the punch-out point. When punch mode is on, all recording will occur only between the punch-in point and punch-out point. No other audio will be recorded. This is very useful if you wish to replace only a small section of a track you have already recorded. (For more information about automated punch-in/punch-out, see Chapter 4 of this manual.)

DECK II's punch mode is constructive. This means that new 'punched-in' audio is automatically playlisted into its position without erasing the old audio. Although this requires more disk space, it allows you to return to the original version instantly, if you do not like the results of the punch in. Remember, you can always recover any wasted hard disk space using the Compact Session command on the File menu.

Loop (Rehearse) Mode Button: The loop (rehearse) mode button toggles DECK II playback functions into loop (rehearse) mode. When DECK II is in loop (rehearse) mode, the 'begin' counter sets the loop start point and the 'end' counter sets the loop end point. When loop mode is turned on, the loop range alone (from begin to end) will play back (or record) repeatedly . No other part of the Session's audio will be played. This is very useful if you wish to rehearse a section of your recording over and over until you are satisfied. (For more information about loop/rehearse, see Chapter 4.)

begin → `00:00:02:11`
end → `00:00:09:17`

Begin and End Time Counters: The begin and end time counters indicate the times that will be used by the loop (rehearse) and punch functions. These counters may be set in five ways: 1) You can set a selection in the Track window, then press the "C" key on your keyboard. This method will automatically enable looping. 2) The begin and end buttons may be clicked during playback to pick up the current counter time. 3) The counters may be clicked and dragged left or right to scrub their values with audio, or command dragged to scrub their values without audio. 4) You may hold down the command key and click on the counters to enter precise times directly. 5) You can use the Set Punch Time From command on the Selection Tools submenu (Options menu) to set the begin and end times automatically from the current Track window selection.

Hint: Hold down the command key and click on the Begin or End button to move that time up into the Transport window's main counter.

`Standby...`

Status Indicator: The status indicator is a simple text field that DECK II uses to alert you to certain situations. For example, when DECK II is set to slave to timecode, the status indicator will contain the phrase "Stand by..." If you are ever unsure what is required of you at a particular stage of DECK II production, or if DECK II seems to be waiting for something, make sure to check this indicator. It will often contain an explanation of the current status.

`-49.51 db`

Control Value Indicator: The control value indicator is a simple text field that always displays the value of the mixer control you are currently moving. This value is displayed in real time as the control is adjusted, and the value is always displayed in the applicable units or in percent of a range of units.

Location Times: The location time buttons are counter memories that allow you to store up to 200 times for immediate recall and location. The current counter time information can be stored as an autolocation time by holding down the command key and clicking on the autolocation arrow that should locate to that time. Clicking on that autolocation arrow at any time will immediately locate to the stored time for playback or recording. Option-clicking on the arrow will delete the

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store time. Use the pop-up associated with an arrow to change the time for that arrow to another stored location. You can name a location time by Command-clicking on this pop-up.

During playback, press the **enter** key on your Macintosh keyboard to store autolocation points automatically.

Autolocation times are stored as a part of the Session file, and will always remain with the Session in which they were created until they are replaced or reset.
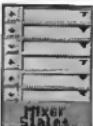
Mixer States: The mixer state buttons are automation states that allow you to take a "snapshot" of the current mixer setting for later recall. To record a mixer state, set the Mixer window level and pan controls to the desired state, then hold down the command key and click on one of the Mixer State arrows. To recall a mixer state, simply press the arrow key. To delete a mixer state, hold down the option key, and click on the desired arrow. You can name a Mixer State by Command-clicking on the pop-up associated with a mixer state button.

Mixer States are stored as a part of the Session file, and will always remain with the Session in which they were created until they are replaced or reset. For more information on using mixer states, see Chapter Six.

Pitch Control Fader: The pitch control fader will be familiar to most people who have operated a multi-track tape deck. It allows you to adjust the audio playback speed by small amounts in order to compensate for pitch and time conflicts. Essentially it is a tape speed control knob that allows you to slow down playback speed continuously from normal speed to a near stop (-98%).

Digital disk-based pitch control is accomplished using real-time sample rate conversion, so some audio distortion may result from extreme settings.

Note:

You may also set the Session playback rate using the Pulldown command on the Options menu.

The MIDI Window

The MIDI window allows you to import standard MIDI files into DECK II. These files will play back in synch with DECK II whenever the Session is played.

This is the DECK II MIDI Window:

File Indicator
Subscribe Button
MIDI Thru Track
MIDI Thru Port
Track Name
Track Port

Import Button
Mute All Button
MIDI Thru Switch
Track Channel
Track Mute Button
Track Solo Button

File Indicator: The file indicator is a simple text field which shows you the name of the current MIDI file.

Import Button: Clicking on this button brings up a dialog box asking you to select a MIDI file to import into the Session. You may change the current MIDI file by pressing the import button. If you select a new MIDI file, all current MIDI data will be erased.

Important:

DECK II only supports the importation of Standard MIDI files as defined by the International MIDI Association specification version 1.0.

Subscribe: Click on this button to subscribe to your Standard MIDI file. With the subscribe function on, whenever DECK II is switched

from the background to the current application, it will look at the current Standard MIDI file to see if it has been changed. If the modification time is more recent than when you first imported the file, DECK II will automatically re-import the file. This function allows you to edit your MIDI file and have the changes be reflected in your Session.

Important: For the subscribe function to work properly, you must re-export your file into Standard MIDI format using the same name.

| mute all | **Mute All:** Activating this button mutes all MIDI tracks. This command takes precedence over solo and mute buttons on individual MIDI tracks. |

| Thru | **MIDI Thru Track:** The first track in the MIDI Window is the MIDI Thru track. |

| Default ▼ | **MIDI Thru Port:** Deck II will use the default port you selected in the MIDI preferences as the port through which outgoing MIDI data is sent. You can change the port by clicking on the port and selecting a new port using the pop-up menu of available ports. |

| off | **MIDI Thru Switch:** Click on this button to turn the MIDI Thru trck on and off. When the switch is on, DECK II will send any MIDI data coming into the system out the MIDI Thru port. |

| Track / Kick | **Track Name:** The track name is a simple text field. You may rename the track by pressing the command key and clicking on the desired track. |

| Port / D4 ▼ | **Track Port Indicator:** Clicking in this area will show a pop-up menu. Depending on the MIDI operating system you are using, this pop-up will show different items. If you are using OMS, the pop-up will display a list of your OMS instruments. If you are using Apple's MIDI Manager the pop-up displays the following list of ports: modem, printer, aux 1, aux 2. If you are using DECK II's internal MIDI setup, this area will display the ports you chose in the MIDI Setup available in the Options menu. |

Track Channel Indicator: This area indicates the channel through which the MIDI data is played. You may change the channel by clicking in the channel area and dragging up or down to the desired channel number. A dash (-) indicates that MIDI data will be played through the channels indicated in the original file.

Track Solo and Mute buttons: These buttons function like the buttons in the Track and Mixer windows. **Click on a track's solo button** when you want to hear that track alone. Click on it again to hear all tracks. Note that multiple tracks may be soloed simultaneously, and that track solo always takes precedence over track mute. **Click on a track's mute button** when you want to turn off that track's playback. Click it again to turn the track's playback on.

The Library Window

The DECK II Library Window offers you an easy way to organize your source material for quick pasting into the Track window. This is the DECK II Library window:
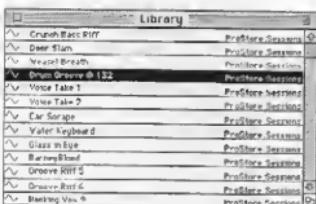
The first column shows you the names of the regions you have placed in the Session using the Add Audio command. The second column shows you the length of the region, and the third column shows you the location on your hard drive of the associated audio file. You may paste a region into the Track window using one of two methods. The

simplest method is to click and hold on the desired region. The cursor will change to an arrow. Move the mouse into the Track window, and let go of the mouse button over the desired location. You can spot audio quite accurately using this method by observing the current time in the data indicator boxes. You may also copy and paste from this window into the Track window.

Hint: If you are importing large quantities of material, use the Add Audio dialog to import all of it. Then use the Library window to spot the regions accurately, rather than pasting them directly into the Track window.

The Library window will only show regions that you have imported into DECK II. If you want to see all regions in your Session in this window, select the **Update from Session** command from the Library Operations Submenu in the Session menu. For more information on Library Operations, see the Session menu section of this manual.

The QuickTime Window

The DECK II QuickTime window displays the currently loaded QuickTime movie, and automatically plays the movie back from its source drive whenever the Session is played. The QuickTime window will also display live video with supported hardware. All QuickTime movies are loaded using the Import Movie command on the QuickTime menu, and only one movie may be loaded at any time. If the original movie contains sound, you have the option of bringing that sound into DECK II for editing, or leaving the original sound in the movie for playback through your Macintosh speaker. When you have finished using DECK II to add and edit sound for your QuickTime movie, you can create a new movie that contains a master version of your Session audio using the Export Movie command on the QuickTime menu.

This is the DECK II QuickTime window:

The QuickTime Window

The QuickTime window contains no special controls. Playback of the movie is accomplished using the transport keys in the Transport window. All other QuickTime-specific and Live Video functions are available on DECK II's QuickTime menu.

The DECK II Menus

The DECK II menus contain commands you will use for file maintenance, destructive editing, track bouncing, mastering, synchronization setup, waveform editing and general program configuration. This section of the Reference chapter lists and explains each of the menu commands you will find in DECK II. Remember, the Reference chapter of this manual is designed to help you find quick, general information about DECK II controls, indicators, and commands. If you have a specific task in mind, or if you want to learn more about a particular DECK II function, see the Using chapters (Chapters 4, 5 and 6) of this manual.

The Apple Menu

The Apple menu is a common menu that is present in every Macintosh application. It contains a list of the items you have in your Apple Menu Items folder in your System folder. The command at the top of the menu is generally the only command that relates to the program that is currently running. Here is a list of the commands you will find on the menu, and a description of each:

The About DECK II command

The About DECK II command opens DECK II's 'about' dialog. The about dialog tells you what program is running, and offers a bit of information about that program. To get rid of the about dialog, click the mouse anywhere on the screen, or hit any key.

The Apple Menu Items List

Below the About DECK II command you will find a list of the documents and applications you have in your Apple Menu Items folder. These items function in DECK II just as they function in any other application.

The File Menu

The File menu is one of the most important of the DECK II menus. It contains all of the commands you will use to create, open, import, load, and maintain the different files created by DECK II. Here is a list of the commands you will find on the File menu, and a description of each:

The New command

The New Session command creates a new empty Session from scratch. When you choose the New Session command, this dialog appears:
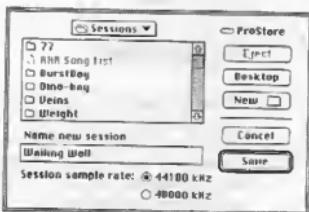
Use the New Session dialog to select the destination folder for the
Session, and the Session type, and name the Session. A Normal
Session creates monophonic Sound Designer II soundfiles in a folder
called "Session Audio Files" in the same folder as the Session docu-
ment. The recorded soundfiles consist of linear 16-bit samples taken at
a rate of 44.1 kHz or 48 kHz, depending on your selection when you
originally create the Session.

The Open command

The Open Session command brings this standard Mac open dialog
onto your screen:
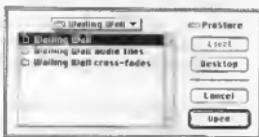
Use this dialog to select the DECK II Session you wish to open for
playback, recording, or editing. A few moments after you click on the
Open button, the Session will appear in the DECK II windows.

The Close command

The Close Session command closes the current Session, thereby
making the DECK II windows disappear. If you wish to keep your
changes, you should always save your work before closing a Session.
However, if you forget to save before closing, DECK II will prompt
you to save or discard your changes.

The Save command

The Save Session command saves all of the changes that have been
made to the Session since the last save. This includes all audio edits,
automation, MIDI map, and QuickTime changes. If you have the
Always Save Regions when Session is Saved preference set (in the

General preferences under the Preferences submenu on the File menu), then saving the Session will automatically save all region definitions to their associated sound files.

The Save a Copy as command

The Save a Copy as command allows you to create and save a copy of the currently open Session under a new name. This procedure will only copy the Session document, and not the associated audio file and cross-fade folders. When you choose the Save a Copy command, the standard Mac save dialog appears.

Use the save dialog to choose a destination for your new Session, and name the Session. The new Session will be an exact copy of the current Session, and will play back the same audio track files from disk. When you are done executing the command, you will be returned to the original Session. Use the Open command to open the new copy.

Important: Remember, when two Session files share the same audio files, any destructive audio edits (Normalize, invert, etc.) will always appear in BOTH. For this reason, it is often wise to execute destructive edits on a copy using the Make a Copy button in the Destructive Effects dialog.

The Revert command

The Revert command disregards all changes made to the current Session and opens the last-saved version of the Session. Use this command when you make an unwanted or accidental change to your Session, and you want to go back to the previous version.

The Add Audio to Clipboard command

This is one of the most important commands in DECK II. It allows you to select any soundfile or set of soundfiles on any mounted hard disk, and add those soundfiles to the Clipboard and the Regions window for Pasting onto any track in the Track window. When you choose the Add Audio to Clipboard command, this dialog appears:
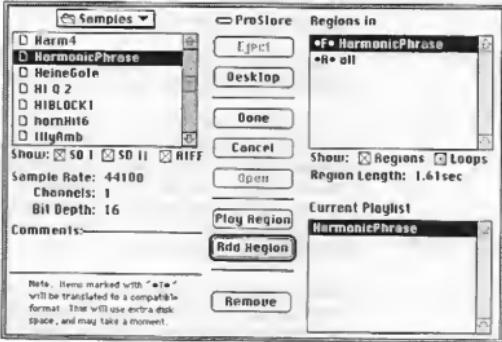
Use the file selector box to find the soundfile you want. When you
select a soundfile, you will see the pertinent information about it,
including the sample rate, number of channels and bit depth. DECK II
supports mono and stereo 8- and 16-bit Sound Designer, Sound
Designer II, and AIFF soundfiles. If you select a soundfile that is not
supported, you will see a message stating "This soundfile cannot be
converted" in the comments area. DECK II does not yet allow you to
add soundfiles with sample rates other than 11, 22, 44.1 or 48 kHz.

Important: QuickTime movies that contain audio at most sample rates can be
                imported using the Import Movie command on the QuickTime menu
                (although the best results will be achieved when the QuickTime audio
                is at 22050 Hz or 11025 Hz). This command makes it possible to being
                QuickTime movie audio directly into the DECK II Track window.

                Once you select a soundfile in the left-hand selector list, you will see a
                list of the audio regions and loops that are in that soundfile. An audio
                region marked with a •F• represents the entire soundfile. Regions
                marked with •R• are simple audio regions, and those marked with
                •L• are loops (AIFF files only). You can audition any file, region or

loop by selecting it and clicking on the dialog's Play button. To add a region, just select it and click on the dialog's Add Region button. This will add the selected region to the Current Playlist in the lower right hand corner of the dialog.

Note:
At any time you can remove items from the current playlist by selecting them and clicking on the Remove button.

Once you have selected the files, regions and loops you wish to add, click on the Done button. This will add all of the items in the current playlist to the Macintosh Clipboard for pasting into DECK II's Track window. Remember, all files, regions or loops which are not mono or do not match the current Session's sample rate and bit depth **will be converted to match.** This may take some time and disk space, because DECK II is making copies of this data.

After a moment you will be returned to the DECK II Track window. **To place the newly added sounds, click anywhere in the Track window waveform area and choose one of the Paste commands.** The regions will be pasted into the track window at that point.

Important:
If you are adding stereo or more-channel regions, make sure that your insertion point or selection range covers two or more channels. Then when you paste, all regions that contained more than one channel will be pasted into the Track window with all of their channels in phase.

Note:
When DECK II adds audio to the Clipboard, it is just adding tiny pieces of information that point to large files on the hard disk(s). For this reason, adding audio via the Clipboard will not take very long, and **requires very little memory.**

Hint:
If plan to add audio to your Session from many sound files, use the Add Audio command to add all of them at once. When you return to the Session, use the library window to select audio to paste into the track window.

The Add SND to Clipboard command

This command allows you to select any sound resource on any mounted hard disk, and add that sound resource to the Clipboard for Pasting onto any track in the Track window. When you choose the

Add an snd command, the standard file dialog appears. Once you have located the sound resource you wish to add, click on the Open button. This will add the sound resource to the Macintosh Clipboard for pasting into DECK II's Track window. Sound resources will be converted to match the current Session's sample rate and bit depth. This may take some time and disk space, because DECK II is making copies of this data.

After a moment you will be returned to the DECK II Track window. To place the newly added sound resource, click anywhere in the Track window waveform area and choose one of the Paste commands. The region will be pasted into the Track window at that point.

The Add SDII Playlist to Clipboard command

This command allows those with Digidesign hardware to edit playlists using Sound Designer II software and easily import their work into a DECK II Session. When you choose the Add SDII Playlist to Clipboard command, a standard file dialog appears. Find the playlist and choose open. Pasting a Sound Designer playlist into the Track window is done in the same manner as pasting any other audio.

The Load Audio File command

This command remains in DECK II from original DECK, and is here out of convenience for original DECK owners. Generally, you will be much better served by adding audio directly to the Track window using the Add Audio to Clipboard command. For those wishing to use the Load Audio File command as a shortcut: it allows you to load an existing audio soundfile directly onto DECK II track 1, 2, 3, or 4. The Load Audio File command brings up this dialog:
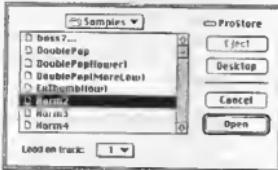
Only monophonic Sound Designer II soundfiles may be loaded using the Load Audio File command. For other file formats, see the File menu's Add Audio to Clipboard command.

Note:

The Load Audio File command can be very helpful for users of original DECK 1.0x. This command allows you to load tracks from your DECK 1.0x Sessions directly onto tracks in DECK II. You may also import an entire DECK 1.0x Session into a new DECK II session using the Import Session command on the Session Menu.

The Compact Audio File command

The compact audio file command is a tool you can use to get rid of unused audio data in a soundfile. When you choose this command, you get this file selector dialog:

This is how an audio file is compacted: DECK II looks at the list of audio regions and loops in that audio file. It then looks through the audio data in the file, and finds all audio data that is not used in any region. After the unused audio has been found, it is permanently deleted from the drive, and all region definitions are updated. The **Handle Size** setting allows you to keep a little bit of extra audio data before every region start and after every region end, which will be useful in the future if you plan to crossfade the regions. You will probably want to set your handle size to at least 2 seconds for this purpose.

The product of the compaction process is generally an increase in the available hard disk space. To compact an audio file, just select that file, enter a handle size and click on the Compact button. If you wish to

compact all of the audio files associated with the current Session, use the Compact Session command on the Session menu.

If you use the entire soundfile in any Session, you will find that there is no unused audio data to delete. In such a case, Compact Audio File may not increase your available disk space.

Important: The **Always Save Regions when Session is Saved** and **Rewrite Regions** preferences in the DECK II General Preferences have strong effects on the compaction process. Make sure to read about those preferences **before** you compact audio files or Sessions.

The Import MIDI File command

The Import MIDI File command allows you to import MIDI files into your Session without opening the MIDI window. When you choose this command, a standard file selection dialog appears. After you choose a file to import, DECK II will open the MIDI Window in your Session. For more information on DECK II's MIDI functions, see the MIDI Window section.

NOTE: DECK II's MIDI Preferences are preset to split channels when importing. If you do not wish the channels to be split, turn this preference off.

The Dispose MIDI File command

Choose this command to delete the current MIDI file from your session. If you do not have a MIDI file in your session, this command will be gray.

The Page Setup command

This command remains gray in DECK II. It will be used for controlling the printing of DECK II Track Sheets.

The Print command

This command remains gray in DECK II. It will be used for controlling the printing of DECK II Track Sheets.

The Preferences Submenu

DECK II's Preferences submenu offers access to five basic user-configurable preference dialogs, and one default setup command:

```
General...
Memory & Storage...
Levels...
Slave Settings...
MIDI...
Save Settings As Template
```
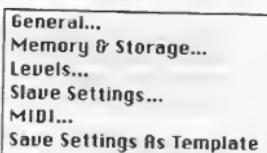
Use these preferences to configure DECK II to your individual working style. These preferences are explained over the next few pages.

The General Preferences

When you select the General preferences, this dialog appears:
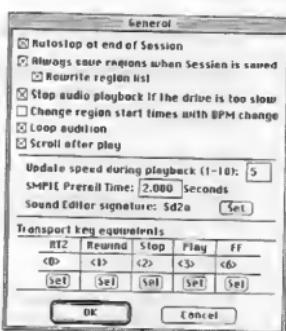
Use this dialog to set the following characteristics for DECK II:

Autostop at end of Session: This preference lets you select whether DECK II should automatically stop playback when the end of the current Session's longest track is reached. Playback stops when the last sample of the last region is played.

Always save regions when Session is saved: This preference should generally be turned on. It makes sure that all audio regions you have created or edited are saved at the same time the Session is saved. If you turn this preference off, the audio regions you create will be local to the Session only, and will not be available for use within other programs such as Pro Tools or Sound Designer II until you select the File menu's Export Session Regions command.

Rewrite regions list: This preference allows you to select exactly what happens when regions are saved out to their source soundfiles. When you have this preference turned off, current Session regions *are added* to their source soundfile. Regions with the same name replace their older versions, but *no existing soundfile regions are deleted*. This means that deleting a region from the current Session will not delete it from its source soundfile, thereby retaining all of the regions you have ever created. When you have this preference turned on, current Session regions *replace* all regions in their source soundfile. In this case, *all existing soundfile regions are deleted and replaced by the current regions*. This means that the current Session's regions are the only regions that will remain in the source soundfiles. Use this option with care. If all of the soundfiles in the current Session are used only by that Session, this command will keep those soundfiles in perfect sync with the Session. This will make the sure that the Compact Session command will yield the best results by making sure that no extraneous regions remain in the source soundfiles.

Stop audio playback if the drive is too slow: This preference allows you to set how carefully DECK II checks to see if your drive is too slow. If you attempt to play four tracks from a very slow drive, DECK may not be able to play them without a small 'hack' or 'skip' in playback. Often this skip is so subtle, you will not be able to hear it. When this preference is turned on, DECK II will put up a warning dialog and immediately stop playback any time disk performance *might* cause a

playback skip. When this preference is turned off, DECK II will continue to play back, even if a slight skip is possible.

Hint: If you are mixing live directly to DAT or a mastering medium, then turn this on. It guarantees that audio playback will be supervised and stopped before any skip might occur. If you are simply editing sound and you plan to mix to disk, then leave this preference turned off. Almost all skips will not be audible, and even if you do hear one, it will not appear in the master file that results from a mix-to-disk.

Change audio times when changing tempos: This preference applies only to edits made in the track window when you are in Beat mode. When this preference is turned on, any change to the tempo in the track window will *move* all audio regions to adjust their start times to the new bar/beat boundaries. This is useful if you are using DECK II as a 'virtual drum machine,' with individual sounds that should shift with a tempo change. When this preference is turned off, any change to the tempo in the track window will *not move any* audio regions. In this mode, no tempo change will ever change the placement of an audio entity. This is useful if you are using DECK II to arrange segments of audio that have their own internal rhythms, or if you are doing synchronization work, and want to make sure that audio times always remain unchanged.

Loop audition: When this preference is on, the Audition Selection command on the Process menu will automatically loop any selected range during playback. When the preference is off, Audition Selection will only play back the selection a single time.

Scroll After Play: When this preference is turned on, DECK II will automatically scroll the Track window to the point at which playback stopped. You can use this function to easily find the waveforms you just played.

Update speed during playback: This preference allows you to set how much time is available for other programs to update in the background behind DECK II audio playback. A setting of '1' allows the background program to update as often as possible. This setting

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makes it easier to see screen activity in background programs. A setting of '10' prevents background programs from updating during playback, allowing DECK II to monopolize your display. This setting does not affect the performance of the background program at all. It only affects screen drawing. A setting of '5' is suggested. If you are running METRO in the background, you may want to set this to '1' to make it easier to see what's happening in the sequencer's windows during DECK playback.

SMPTE Preroll time: This setting applies only if you are recording or playing audio while on-line and synchronized to SMPTE timecode. In such cases, the preroll time is the time you allot to DECK II to lock-up and begin playback. The number of seconds you choose is the time between the first received SMPTE frame value and the start of DECK II playback. The default setting is 5 seconds. If you have a fast Macintosh and fast hard disks, you can set this to a lower number (2 seconds, for example) for faster lock-up times. If you have a slow Mac, slow drives, or problems locking up to SMPTE, try setting this value to 6 or 8 seconds. (In almost all configurations, 5 seconds will suffice.)

Sound editor signature: This preference applies only to the Launch Editor command on the Process menu. It is designed for users who wish to use a dedicated two-track destructive editor to further edit their DECK II audio regions (Sound Designer II or Alchemy, for example). This is the Macintosh signature of the program you wish to launch as your waveform editor. To choose the program you wish to use as your an external editor, click on the Set button, and use the resulting Open dialog to select the program you desire. When you click on the open button, the editors signature will appear. From that point on, when you select a waveform region in the Track window and choose the Launch Editor command on the Process menu, you will be launched into your audio editor, and the correct soundfile will appear with the applicable range selected.

Transport key equivalents: These boxes indicate the Macintosh keyboard keys that will operate your DECK II tape transports. Any keys that type a visible character can be used as a tape transport key. (Keys such as return and clear cannot be used.) Once you set these

equivalents, the DECK II tape transports buttons can be controlled directly from the Mac keyboard. To set a key equivalent, click on the applicable Set button. Then press the key you desire for that function.

Only one function may be used per key. During the setting process, if you attempt to type a key that is already assigned to another function (or if you click on a key that is not valid), you will hear a warning beep. You must click on a valid key before you will be allowed to continue.

The Memory & Storage Preferences

When you select the Memory & Storage preferences, the following dialog appears:

```
┌─────────── Memory & Storage ───────────┐
│ Pre-allocate entire record drive:       │
│   ○ Never                               │
│   ⦿ Always                              │
│   ○ When recording 2 or more tracks     │
│                                         │
│   Disk buffer size:    192    Kbytes    │
│   Max. play tracks:    4                │
│   Automation buffer:   3072   events    │
│   MIDI buffer:         20000  events    │
│                                         │
│      ┌──── OK ────┐   ┌── Cancel ──┐    │
└─────────────────────────────────────────┘
```
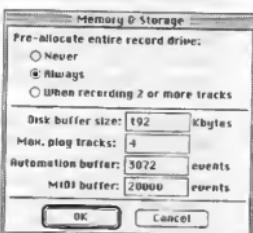
Use this dialog to set the following characteristics for DECK II:

Pre-allocate entire record drive: This preference controls disk pre-allocation, depending on how many tracks are being recorded. By preallocating, or pre-reserving hard disk space before recording, you speed up the recording process by decreasing the amount of time your Mac uses to seek for unused disk space. Disk space that is preallocated is known to your Mac, and therefore it does not need to be found. Note that, although pre-allocation does improve performance, it will slightly increase the delay before recording begins. To turn off pre-allocation, just choose the Never option.

Pre-allocation is generally only needed when you record 3 or 4 tracks simultaneously (depending on your Mac and drive). An old Mac II (68020) with a slow drive will probably best be served by a setting of Always, in which case remaining drive space is all pre-allocated whenever you are recording. If you are experiencing "Disk too slow" messages during recording on a fast Mac/hard disk combination, try setting this preference to "When recording 2 or more tracks." This will only pre-allocate the drive only when you are asking your Macintosh to work hard.

Disk buffer size: DECK II accomplishes its recording and playback tasks by swapping hard disk audio data through RAM and out to your audio outputs. The chunks of audio data that are placed in RAM reside in disk buffer. When you have a small disk buffer (128K or less), DECK can load and manipulate these buffers quite quickly, so program response may seem smoother, but more pressure is put on the performance of the hard disk. When you have a large disk buffer (512K or more), it may take DECK longer to load the buffers from disk, but those 'loadings' can occur less often, so less performance is required from the drive. If you have a fast Mac and a fast drive, leave this setting at 192K. This should allow generally smooth operation. If you have a slower Mac, or especially a slower drive (an erasable optical drive, for example), increase these buffers until your playback performance increases. It is not surprising, with extremely slow drives, to use a disk buffer setting of 1024K.

Important:

As explained, your disk buffer is stored in RAM. If you increase the size of your disk buffer, you should also increase the amount of RAM you allocate to DECK II. This is accomplished by selecting the DECK II icon in the Finder, and choosing the Get Info command on the File menu. Use the resulting window to increase the preferred RAM allocation by at least four times as much as the increase you entered in the disk buffer size. (Remember, there are four disk buffers – one for each play track.)

Max. play tracks: Use this seting to select the default number of playback tracks for DECK II Sessions. You can decrease this number if you wish to use fewer playback tracks (to save RAM by decreasing the number of allocated buffers, for example), but you cannot increase the number of tracks above your system's limitations.

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Automation buffer: This setting is the number of automation events allocated to your Session. The default setting is 3225, and this is not very much. If you are using basic automation envelopes for simple level and pan changes, this setting should suffice. If you are creating complex automation envelopes, or using large amounts of real-time fader automation recording, then you may wish to increase this allocated amount. Remember, if you increase it by a large amount, you should also increase the amount of memory allocated to DECK II (as explained in the previous paragraph).

MIDI buffer: This setting is the number of MIDI events allocated to your Session. The default setting is 5120, and this should suffice for small files. If you have long MIDI files, or have many tracks, then you may wish to increase this allocated amount. Remember, if you increase it by a large amount, you should also increase the amount of memory allocated to DECK II.

The Levels Preferences

When you select the Levels preferences, the following dialog appears:

```
┌─────────────────── Levels ───────────────────┐
│  Audition Volume: │-9.01│ dB │724│  (0 - 1023) │
│                                                │
│  Audition Outputs: ◉ 1&2   ○ 3&4              │
│                                                │
│  Clip Light Treshold: │0.00│  dB              │
│                                                │
│  ☒ Only compact files that will free disk space│
│     ☐ Only compact files that free │15│ percent│
│     ☐ Only compact files that free │0.000│ MB  │
│                                                │
│       ( Cancel )      ┌─────────┐              │
│                       │   OK    │              │
│                       └─────────┘              │
└────────────────────────────────────────────────┘
```
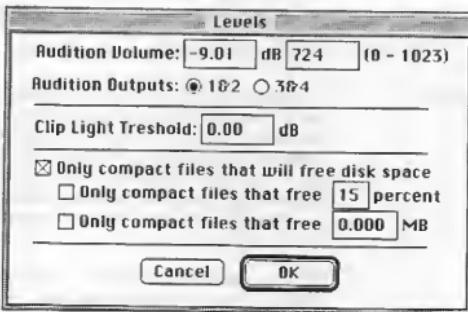
Use this dialog to set the following characteristics for DECK II:

Audition Volume: Use this setting to change the level of audition volume. You may choose either a dB value, or a number between 0 and 1023.

Audition Outputs: Use this setting to switch the audition outputs between pan pairs 1&2 or 3&4. You may change this setting only if you are using the Sound Tools II or ProTools hardware.

Clip Light Threshhold: The clip light turns on if the incoming signal is above the Clip Light Threshhold. The default setting is 0.00dB; use this setting to lower it. Remember, audio recorded with the clip light on may be distorted.

Only compact files that will free disk space: This preference and those associated with it control how much disk space the Compact File and Compact Session commands will free up for you. The Compact command writes each region into a new file and eliminates any data that is not used in the original file. However, if you have many regions that overlap in a file, the compaction process will not save you any disk space; it may even take up more. We recommend that you leave this setting turned on.

Only compact files that will free ___ percent: Like the above preference, this preference further constrains the compact command. Simply choose a percentage and the compact command will not work below that amount.

Only compact files that will free ___ MB: Like the above preference, this preference constrains the compact command. Simply choose a number and the compact command will not work unless it frees that much disk space.

The Slave Settings Preferences

When you select the Slave Settings preferences, this dialog appears:
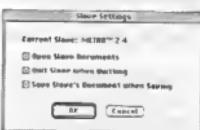
Use this dialog to set the following characteristics for DECK II:

Current slave: This indicator shows the name of the program that is running as a time-linked slave to DECK II on your Macintosh. This will generally be a sequencer, such as OSC's METRO, but it can be any background-compatible program that understands DECK II's timing architecture. If you have a program that is incompatible with this slaving architecture, contact OSC and the program's manufacturer. OSC supplies the technology necessary for this architecture free of charge to any interested party.

Hint: You do not need to set this slave setting. The slave software automatically makes itself known to DECK II via AppleEvents. All you have to do is start up the slave program one time with DECK II running in the background. If the program is slave-compatible, its name will then appear in this indicator.

Open slave documents: This check box lets you choose whether DECK II should always start up the slave application and open the associated document whenever a DECK Session is opened. When you are running METRO with DECK II, for example, DECK II keeps track of what MIDI file is open in METRO and associates that MIDI file with the current DECK Session file. When you have 'Open slave documents' checked in this dialog, opening a DECK II Session will automatically open the associated MIDI file in METRO in the background. This gives you an easy way to keep all of your associated files linked together, and makes it possible to open DECK II, the DECK II Session, METRO, and the associated METRO MIDI file simply by double-clicking on the DECK II Session document.

Hint: Both DECK II and METRO offer the ability to open the other application and its associated document. Turn on this function in one program OR the other, not in both. Choose which program is the one you generally use first in the composition or tracking process, and configure that program to open documents in the other application.

Quit slave when quitting: This check box lets you set DECK II to force the slave application to quit when you quick DECK II. This is a simple time-saving function, and is particularly useful if you are using

the slave in a 'transparent' way, and you don't want to be reminded that the slave is even running.

Save slave's document when saving: This check box allows you to choose whether DECK II should automatically save the slave program's document any time the current DECK II Session is saved. This preference is useful, because it helps make sure that DECK Session versions always stay in sync with slave application documents (METRO MIDI files, for example).

The MIDI Preferences

When you select the MIDI preferences, this dialog appears:

MIDI Preferences
☒ Split channels on incoming MIDI files
Default output port: [Wavestati... ▼]
Timecode output port: [ADAT Input ▼]
[Cancel] [OK]

Use this dialog to set the following characteristics for DECK II:

Split channels on incoming MIDI files: When this preference is on, DECK II will split the channels when you import a MIDI file. This is useful when you are importing Type 0 MIDI files, which store all track data in one channel.

Default Output Port: This pop-up lists your MIDI ports and uses the first one on the list as the default output port. To change the port, simply select a different port using the pop-up menu.

Timecode Output Port: This pop-up controls through which port outgoing MIDI Timecode is sent. To change the port, simply select a different port using the pop-up menu.

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The Save Settings as Template Preference

When you choose this command, DECK II will take a "snapshot" of the current location of all open windows. Whenever you create a new Session, DECK II will automatically open only those windows, and they will be in the same location.

The Quit command

The Quit command closes the current Session, and quits DECK II. If choose the Quit command, but you have not saved your changes, then DECK II will ask you if you want to save them. If you click on the Don't Save button, *all of the changes that you have made since your last save will be discarded.*

The Edit Menu

The Edit menu is an important part of most applications, and it is really central to DECK II Track window functions. In some ways you can think of the DECK II Track window as a word processor for sound – it allows you to organize and place sound into a finished structure for presenting that sound. Most of your edits consist of placing components (soundfile regions), copying and/or pasting those components. The Edit menu contains all of the command you will use to make these kind of manipulations. Here is a list of the different Edit menu commands, and a short explanation of each:

The Undo command

Undo allows you to reverse the effect of the last edit operation performed. Undo is extremely useful if you perform an edit operation and don't like the result. To reverse the edit, choose Undo and DECK II will revert to the state prior to performing the edit operation. You can also 'undo an undo,' thereby returning to the edited form.

Undo only reverses the most recently performed action. This is because most edit operations, such as cut or copy, are placed in the Edit buffer until the next operation is performed. Undo retrieves only the most recent edit operation from the Edit buffer.

Some operations cannot be undone. In such cases the Undo command will be grayed and unavailable. DECK II will always warn you if you are executing a process that cannot be undone (certain destructive effects, for example). Be sure to consider carefully before performing 'non-undoable' operations. You may also want to save your file before executing dangerous edits. This will allow you to use the Revert command (File menu) to revert to the most recently saved state of the file.

The Cut command

Cut removes selected data from its original location and places it on the Macintosh Clipboard for Pasting (or for deletion). Using another edit operation, such as Paste At or Paste After, retrieves this data from the Clipboard. If you perform an edit operation that does not retrieve this data, such as another Cut, the Clipboard data will be deleted and lost. The result of only one edit operation at a time may be contained on the Clipboard.

Cut removes data; it does not affect time. When you cut waveform data, a space is left where the data was located. If you want to cut out waveform data and 'close the hole' by sliding later waveform data earlier, use the Remove command.

The Copy command

Copy makes a duplicate of selected data and places that duplicate data on the Clipboard. Using another edit operation, such as Paste After, retrieves this data from the Clipboard and places it at the destination location (selected range or insertion point). The originally selected data is unaltered.

Important: Cut and copy do not really place the actual waveform data onto the Mac Clipboard. That amount of data would generally not fit on the Clipboard, and would require a very long time to be processed. In fact, DECK II only places 'pointers' on the Clipboard, and those pointers point at the source audio data on the drive. For this reason, you can execute audio edits very quickly, regardless of the size of the edit, or the amount of memory your Mac contains.

The Clear command

The Clear command removes the selected data without placing it on the Macintosh Clipboard. This command makes it possible to copy a waveform region, clear a different region, and then Paste the originally copied region. (If you had used Cut to clear the waveform data, the originally copied range would have been lost.)

Hint: The Delete key on your Macintosh keyboard performs the same function as the Clear command.

The Paste At command

The Paste At command takes the contents of the Clipboard and places then at the insertion point or selected range. If a waveform range or region is selected, the Paste At command will replace that selection with the Clipboard contents. If the Clipboard contents are longer than the selected destination range or region, then the entire Clipboard will be pasted, potentially covering up audio regions after the paste point. If you want to constrain the paste not to exceed the size of the selected range or region, see the Replace command on the Edit menu.

Important: If you are copying regions from more than one track, than you will need to select more than one destination track for any Paste command. Selection a single destination track will paste only the first copied track.

The Paste After command

The Paste After command takes the contents of the Clipboard and places then after the insertion point or selected range. If a waveform range or region is selected, the Paste After command will put the entire Clipboard contents after that range or region. Use Paste After to perform copy-and-duplicate edits, by copying the waveform range or region, and executing multiple Paste After commands.

Hint: You can use the Multiple Paste After command to automate this process.

Hint: Remember that you can perform many important arrangement edits using drag features or the arrow keys in tandem with the command, option and control keys. Experimentation with these key combinations will help you develop more efficient editing methods. See the Track window section at the beginning of this chapter for more information.

The Multiple Paste After command

The Multiple Paste After command allows you to pastes the contents of the Clipboard multiple times after a given point. This command brings up a following dialog which asks you to choose the number of copies of the current data you wish to paste. DECK II will paste them after the last insertion point.

The Replace command

The Replace command takes the contents of the Clipboard and replaces the currently selected range or region with those contents. If the Clipboard contents are longer than the selected destination range or region, then only that portion of the Clipboard that fits into the selected range will be pasted. If the Clipboard contents are shorter than the selected destination range or region, then the Clipboard contents will replace the entire selected range or region, potentially creating an area of silence at the end of the destination range or region.

The Slice command

The Slice command performs an in-place separation of the selected waveform Range, thereby making a region of that range. Slice is only available in Range mode. To slice a waveform range, simply select that range and choose the Slice command. This will create a stand-alone waveform region which you can use for arrangement purposes. Remember, DECK II offers an even faster way to slice a region for arrangement purposes. You can always just select the waveform range you desire, then just click and hold the mouse on the selected range, and drag that range (or option-drag a copy) to the new destination. This tear-off solution is often much faster than the Slice command

when you are doing basic arrangement, however the Slice command is very useful if you wish to define a new region without moving that region.

<table>
<tr><td>Hint:</td><td>You can also use the slice command when only an insertion point is present. This allows you to create a boundary, thereby generating two regions (the region before the boundary and the region after the boundary).</td></tr>
</table>

The Insert At command

The Insert At command performs the same basic functions as the Paste At command, except it pushes all of the waveform data after the insertion point **later** by the length of the Clipboard contents. The Insert At command **never** replaces waveform data. If a waveform range or region is selected, the Insert At command will simply insert beginning at the range or region's **start point** and push all subsequent regions later in time. The selected range or region will not be deleted.

<table>
<tr><td>Important:</td><td>If you are copying regions from more than one track, than you will need to select more than one destination track for any Insert command. Selection a single destination track will insert only the first copied track.</td></tr>
</table>

The Insert After command

The Insert After command performs the same basic functions as the Paste After command, except it pushes all of the waveform data after the insertion point **later** by the length of the Clipboard contents. Like the Insert At command, the Insert After command **never** replaces waveform data. If a waveform range or region is selected, the Insert After command will simply insert beginning at the range or region's **end point** and push all subsequent regions later in time. The selected range or region will not be deleted.

<table>
<tr><td>Hint:</td><td>Remember that you can perform many important arrangement edits using drag features or the arrow keys in tandem with the command, option and control keys. (The control key performs Insert functions).</td></tr>
</table>

Experimentation with these key combinations will help you develop more efficient editing methods. See the Track window section at the beginning of this chapter for more information.

The Insert Time command

This command brings up this dialog box:

	Bar	Beat	Tick
Start Time	9	1	1
End Time	13	1	1

[OK] [Cancel]
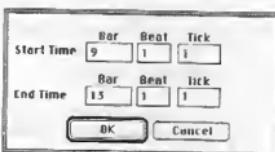
This dialog lets you insert empty time on any track or tracks. To insert time, select the waveform region or range after which you wish to create empty space, then choose the Insert Time command. If you want to insert time on multiple tracks, select regions or ranges on multiple tracks. When the dialog appears, the start time will default to the time immediately after the end of the selected range of region. You can then type in a desired end time, or edit the start and end times to your liking. When you are ready, click OK. Empty space will be inserted as you specified on the tracks that were selected when you chose the Insert Time command. No waveform data is ever deleted – empty time is simply inserted. If you enter a start time that is in the middle of existing regions, those regions will be split into new regions to make room for the empty time.

The Remove command

The Remove command functions in a fashion similar to the Clear command, except Remove deletes the actual time associated with the selected region or range, causing all later regions on the selected track(s) to slide earlier in time. Use the remove command to prevent the creation of empty time on a track (or tracks) and close the gap created by a deletion automatically.

The Select All command

This command selects all of the waveform data in the current track or tracks. If you are in Range mode, the data is selected as a range. If you are in Object mode, the regions are selected as objects. When you want to select all on a single track, click put an insertion point on that track, or select a range or region on the track, then choose the Select All command. When you want to select all on more than one track, click put an insertion point on those tracks, or select a range or regions on those track, then choose the Select All command. To un-select the current selection, choose the Deselect command on the Edit menu.

The Deselect command

This command automatically un-selects all ranges or regions, leaving you with no selection or insertion point in the Track window.

The Rename command

This command allows you to rename the current soundfile region or selected track. **To rename a soundfile region,** just select that region in the Track window and choose the Rename command. Use the ensuing dialog to enter the new name, then click on OK. To rename a track **playlist,** just select that play track or work track by clicking in the track name area at the left-hand side of the Track window. Then choose the Rename command. Use the ensuing dialog to enter the new playlist name, then click on OK.

Hint:

You can rename track playlists, mixer states, and location times in the mixer window and transport window by holding down the option key and clicking on the specific playlist, mixer state, or location time pop-up. This allows you to rename the item currently displayed on that pop-up.

The Process Menu

The Process menu contains all of the DECK II commands you will use to create new tracks and process audio constructively or destructively. It gives you access to fades and crossfades, normalization and other effects, and lets you control the track bouncing and mixing functions.

Here is a list of the commands you will find on the Process menu, and a description of each:

The New Track command

This command creates any number of empty tracks in the Track window. The New Track command brings up a dialog in which you enter the number of new tracks you need. You may always add more. If there are already four or more audio tracks in the Track window, this command creates a new empty work track(s). Use this command to create a destination track for recording, or for pasting in audio data from the Clipboard.

Hint:

If you have added audio regions to the Clipboard using the Add Audio to Clipboard command on the File menu, you can auto-create new tracks in the Track window simply by choosing the Paste At or Paste After command with no insertion point or selected range.

The Bounce All to Mono Clipboard command

This is a very important command for DECK II Track window users. The Bounce to Mono Clipboard command allows you to remix one or more tracks to disk, in order to combine them for playback on a single track. The command automatically bounces the currently selected range to the Clipboard, including all automation events and cross-fades. **Bounce to Mono Clipboard always mixes all four play tracks**, so if you want to remove certain tracks from the mix, use the mute button to mute those tracks. When you choose Bounce to Mono Clipboard, all pan information on the play tracks is ignored, and a mono soundfile is the result. To place the newly mixed Sound Designer II mono file on a track, select the destination (with an insertion point or range) and choose any Paste or Insert command.

Bounce to Mono Clipboard and Bounce to Stereo Clipboard are key functions for hard disk recording. They allow you to create submixed tracks **without deleting the original source tracks**. By doing this, you can build up a complex mix without throwing away your source, and you can always go back and remix any submix.

Hint:	Once you have bounced multiple tracks to mono or stereo and pasted in the resulting files, move the original source tracks to DECK II work tracks, and create new empty tracks. Use these new empty tracks to record or arrange more audio. By following this process, you can create mixes that are hundreds of tracks deep without any analog signal degradation. Remember, you may also mix Work tracks when the Virtual Mix command is enabled.
Hint:	If you are bouncing only portion of the current Session to the clipboard, select the empty destination track(s) to specify the range to be bounced. DECK II always bounces the four playback tracks, so by using this method, you return to the Track window after the bounce with the correct, phase accurate range selected. Then just choose the Paste At command to paste the bounce file in-phase with its source tracks. Note that this also works if you select a destination range on a DECK II work track.

The Bounce All to Stereo Clipboard command

The Bounce to Stereo Clipboard command functions in the same fashion as the Bounce to Mono Clipboard command, except it creates a stereo mix file and places it on the Clipboard. This mix file reflects the currently selected range, including all automation events and crossfades. Bounce to Stereo Clipboard always mixes all four play tracks, so if you want to remove certain tracks from the mix, use the mute button to mute those tracks. When you choose Bounce to Stereo Clipboard, all pan and volume information on the play tracks is used, and two mono soundfiles are the result. To place the newly mixed Sound Designer II mono files on tracks, select the destination tracks (you must set an insertion point or range across two tracks) and choose any Paste or Insert command. For some applicable hints, see the previous explanation of Bounce to Mono Clipboard.

Hint:	Bouncing to the Clipboard is very useful for creating submixes internal to your DECK II Session. You will always bounce tracks when you are attempting to collapse multiple tracks to make room for new tracks (for overdubbing purposes). If you are done with your DECK II Session, and you want to create a master mix file on your hard disk, see the Mix to Disk command on the Process menu.

The Mix to Disk command

The Mix to Disk process creates a final mono or stereo Sound Designer II, AIFF or Sound Resource soundfile that exactly reflects the way the Session sounds when it plays back (there is one exception to this rule-- see the Virtual Mix command below.) All level and pan settings, and automated changes are made as the file is mastered. Choosing the Mix to Disk command brings up this dialog:
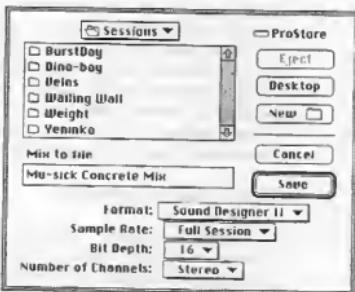
To execute the mix, choose the type of file you desire. You can choose between Sound Designer II, Audio Interchange File Format (AIFF), or Sound Resource. These three file types cover a broad range of compatibility. You should try to maintain the highest sample rate and bit depth, and the stereo image for best results. If you are mixing for multimedia, you may need to mix your file in 8-bit format at a lower sample rate (half session = 22 kHz and quarter session = 11 kHz for 44.1 kHz Sessions). Before mixing your file to disk, make sure to check which format is required for playback.

Hint:

Generally, if you are creating an audio master file for CD pressing or sync-to-picture, you should select Sound Designer II, Full Session sample rate, 16-bit and Stereo as your mix file format.

When you have typed in a name for your master, and chosen a type and destination, click on the OK button. The mastering process will take a few minutes (depending on the length of the recording). After it is complete, you will find your master soundfile in the folder you designated.

It is always better to use the Mix to Disk command to create your audio master file instead of mastering directly to DAT. Mixing to a random access medium (your hard disk), guarantees that your final mix file will be an **exact copy** or your Session data. You can then back this copy up to streaming tape, optical disk or DAT data backup for optimum results. DAT audio recorders are sequential recorders, and they use error correction schemes to compensate for data integrity problems. Unlike a hard disk, a DAT recorder doesn't verify that your data is undamaged, and it cannot rewind and re-retrieve data if it encounters a data transmission problem.

The Virtual Mix command

This command controls which tracks DECK II will mix when you choose the Bounce or Mix to Disk command. When this command is off, DECK II will mix only the four or eight active Play tracks. This will create a mix that sounds exactly the same as when you play the session. However, when this command is on, DECK II will also mix whatever is on the Work tracks. Because DECK II's automation follows the playlist, this allows you to create a more complex mix.

The Fade Selection command

This command is only available when you have a waveform range selected. Use this command to: 1) fade in the beginning of a waveform range, 2) fade out the end of a waveform range, or 3) crossfade between two waveform ranges. All fades and crossfades are built constructively, which means that the original audio data remains unchanged. To remove a fade or crossfade, just select the range that contains the fade and choose the Delete Fade command on the Process menu.

To fade in the beginning or fade out the end of a region: Select the range that you wish to fade in. It should look something like this:

Then choose the Fade Selection command. After a few moments, your waveform will reappear, looking something like this:

When you play this region back, you will now hear it fade in slowly to full volume. You can execute this type of fade on a single region, or any group of regions. Remember, fades are made constructively, so your original data has not been changed. Use this same method to fade out the end of a region or regions.

To crossfade between two adjacent regions: Select the range that you wish to crossfade. It should look something like this:

Then choose the Fade Selection command. After a few moments, your waveform will reappear, looking something like this:

When you play these regions back, you will now hear the first region fade out while the next region fades in, thereby creating a smooth transition. You can execute this type of fade on a single pair of regions, or any group of region boundaries. Remember, fades are made constructively, so your original data has not been changed. For more information about fades and crossfades, see the Visual Waveform Editing chapter of this manual.

Important: The curve that is used by the Fade Selection command is set using the Set Default Fade command on the Process menu. By setting the default fade curves and using the Fade Selection command, you can avoid setting the fade curves every time you create a fade or crossfade. If you want to set the fade out and fade in curves every time you execute a fade, use the Custom Fade command instead of the Fade Selection command.

Important: Crossfades require that there is waveform data on your hard disk after the end of region 1 (the fade out area) and before the beginning of region 2 (the fade in area). If you have no data in these areas of the source soundfile, DECK II will warn you, but it will allow you to attempt to build the crossfade using whatever data is available.

The Set Default Fade command

This command lets you set the DECK II default fade curves and default fade times. It brings up the following dialog:
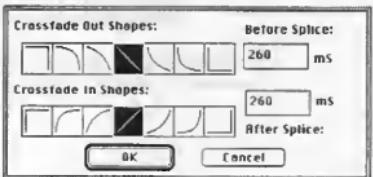
Use this dialog to default fade out and fade in curves, and the default
fade times associated with these curves. The following curves are
available:

Fade Out Shapes

This curve keeps Region 1 at full volume throughout the crossfade and
then immediately fades it out at the very end of the selection.

This curve fades out Region 1 relatively slowly, keeping the amplitude
fairly high. Towards the end of the crossfade, the amplitude drops off
sharply.

This curve fades out Region 1 slightly faster, with the amplitude
slightly lower than the previous envelope. This curve is the same as
the "equal power" curve found in Sound Designer II.

This envelope fades out Region 1 with a linear fade curve. It creates a
smooth, even fade out. It is the default curve.

This curve fades out the amplitude of Region 1 relatively quickly at the
beginning of the crossfade.

This curve drops the amplitude of Region 1 even more quickly at the
beginning of the crossfade.

This envelope silences Region 1 at the beginning of the crossfade.

Fade In Shapes

This curve brings up Region 2 at full volume immediately at the very beginning of the crossfade and keeps it there throughout the crossfade.

This curve fades in Region 2 quickly in the beginning, reaching full amplitude fairly early in the crossfade.

This curve fades in Region 2 at a moderately fast rate with slightly lower overall amplitude.

This curve fades in Region 2 with a linear fade curve. It is slightly slower, with an even amplitude throughout the crossfade. This is the default envelope.

This curve fades in Region 2 slowly at the beginning of the crossfade.

This curve fades in Region 2 even more slowly than the previous curve.

This curve silences Region 2 until the end of the crossfade.

The **default fade times** only apply to instances where you are fading and/or crossfading multiple regions in a large selection. This function allows you to select hundreds of regions and region boundaries, and execute fades on all regions at once. Use the Custom fade command if you want to enter manually precise fade times other than the default values.

Hint:

The default fade times are also used whenever you select a waveform range or boundary and choose the Default Fade command. The Default Fade command always executes the fade or crossfade using the default fade **times**, regardless of the selected range. This is a useful tool, because it lets you generate very short fades and crossfades **without** requiring you to zoom way into the display to select the extremely short waveform ranges.

The Default Fade command

The Default Fade command executes fades in, fades out, and cross-fades on all of the waveform regions and region boundaries that are selected. The fades and crossfades are all created using the fade curves and fade times set in the Set Default Fade dialog box. Based on the selection, Default Fade will create: **1)** a fade in at the start of any region with empty space before it, **2)** a fade out at the end of any region with empty space after it, **and 3)** a crossfade between any two regions that touch. Default Fade is also very useful for creating very short fades and crossfades, without requiring that you zoom all the way in to select the tiny range. For example, if you want to create a 10 ms crossfade between two regions, you can set the default fade times to 5 ms before and 5 ms after. Then, the tiny crossfade will be created any time you select a waveform range that crosses the boundary between two regions, **regardless** of the size of the selected range.

Hint:

If you select a single region in Object mode and choose the Default Fade command, the default fade in and fade out will both be executed on the region.

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The Custom Fade command

The Custom Fade command functions in exactly the same fashion as the Fade Selection command, with one major difference. The custom Fade command always brings up a dialog similar to this:
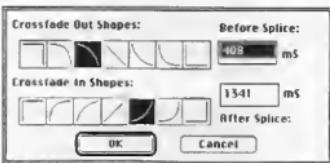
Use this dialog to select the fade out shape and fade in shape for the desired fade or crossfade. The indicated times are the ranges (in milliseconds) of the selection. You should use the Custom Fade dialog any time you are creating a specialized fade or crossfade, and you don't want to use your selected default shapes.

Important: If you are using the Custom Fade command to create a fade in or a fade out, you will only see one set of fade shape icons.

Hint: You can use the Custom Fade command to execute custom fades and crossfades on multiple selected regions. This allows you to create specialized fades and crossfades and generate them without changing DECK II's default fade settings.

Hint: Crossfades are created in memory, so if DECK II tells you that there is not enough memory to generate a fade, you can increase the size of DECK II's memory partition (using the Get Info command in the Finder), and try the fade again. If you are having trouble generating extremely long fades or crossfades due to memory limitations, try using DECK II's volume automation envelopes. These require no extra RAM, and can generate 24-bit fades of any length.

The Delete Fade command

Use this command to delete any existing fade or crossfade. To delete a fade, simply select the waveform range or region that contains the fade, and choose the Delete Fade command. To delete multiple fades and crossfades in a single step, select all of the regions that contain the fades and choose the Delete Fade command.

The Destructive Effects submenu

The destructive effects submenu contains all of the digital signal processing (DSP) functions that can be executed on waveform regions in the DECK II Track window. If you have purchased third party plug-ins for use with your DECK II workstation, they will appear here. In order to use these functions, you will need to select one or more regions in Object (hand) mode or select a range in Range (waveform) mode. Note that, although these processes are called "destructive," they can be used either constructively or destructively.

Whenever you execute any of OSC's destructive processes except duplicate on this submenu, this dialog appears:


```
                    WARNING!
  This process will permanently alter deck data.
            Do you want to continue?

    [   OK   ]   [ Cancel ]   [ Make a copy ]
```
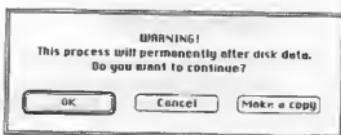
If you wish to process the **actual source data**, click OK. This process cannot be undone, so use it with care. If you wish to create a new, processed copy of the source data, click on the Make a Copy button. This is the suggested method, because it always maintains the source data in original form. This can be particularly important if you are processing an audio region that is used multiple times in the Session. If you process the actual file, instead of making a copy, **all instances of that source file will be changed.** For this reason, **always process original soundfile regions with care.**

The Normalize command

The Normalize command allows you to adjust the level of an audio range or region(s) so that it peaks at 100% of the available amplitude (volume) without clipping or distorting. This is one of the most useful functions for editors of digital audio, because it squeezes the most volume out of your digital audio. If you apply this effect to a group of regions, DECK II will find the peak in each region and adjust each region accordingly.

The Group Normalize command

The Group Normalize command functions in the same manner as the normalize command, except that it is applied to a group of regions. This function will search for the peak in a group of selected regions and apply one gain to all regions. Use this command for true stereo or quad normalization, or to normalize an entire edited track.

The Invert command

The Invert command turns the waveform 'upside-down' (phase inversion), which doesn't change the way it sounds, but can be very important for certain sound design tasks.

The Reverse command

The Reverse command allows you to create a backwards version of any selected range or region(s). When you select any of these three commands, the standard processing dialog appears.

When you are ready to process the range or region(s), click on the OK button (to process the original) or on the Make a Copy button (to create processed copies, leaving the originals intact).

The Duplicate command

The Duplicate command physically duplicates the audio data of any selected range or region(s). The new audio files can be found in your Session's audio files folder. The selected region or regions will then access the data from this folder and not the original source.

For more information about the destructive effects, see Destructive Signal Processing at the end of this chapter.

The Region Info command

The Region Info command shows you information about a selected region. You must select the region in Object mode. When you choose the Region Info command, the following dialog appears:
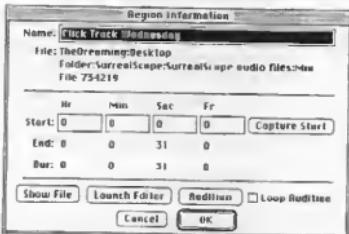
The dialog shows you the region's name, followed by the location on your hard drive of the associated audio file. You may rename regions in this dialog box. Below the file location, the region's start, end, and duration times appear. You may change the start time of the selected region by typing the new time in the start time fields. If you press the **Capture Start** button, the new start time will be the current SMPTE time.

Pressing the **Show File** button will switch DECK II to the background, and highlight the audio file associated with the region on the desktop. The **Launch Editor** button will switch DECK II to the background, and then open your chosen sound editing program with the audio file associated with the selected region. The selected region will be highlighted in the sound editing program. The **Audition** button will play the selected region. If you have the **Loop Audition** box checked, pressing the Audition button will loop the selected region.

Hint: Double-clicking on any region in the Track window while in object mode will open up the Region Info window for that region.

The Audition Selection command

The Audition Selection command plays back only the selected range or regions, automatically muting all unselected audio. You can use this command to listen to specific portions of your Session to evaluate them for editing or arrangement purposes. Remember, Audition can be used on one or more tracks at the same time.

Shortcut: Don't forget about the Loop audition setting in the General preferences (on the File menu's Preferences submenu). When this option is turned on, the selected range or regions always loop automatically when auditioned. This is an excellent way to test out loops for composition or ambience-building purposes.

The Launch Editor command

This command automatically starts up the sound editing program you selected using the Set button in the General preferences (on the File menu's Preferences submenu). If you have a waveform range or region selected, the soundfile that contains that region will be opened and the region will be selected automatically in the sound editing program. This function is intended primarily for users of Sound Designer II who wish to access some of that programs two-track destructive signal processing, but it will work with other programs.

The Automation Thin command

Use this command to delete extraneous automation data. If you are
using the Mixer window or an external device to record automation
events, many more envelopes appear than if you use the Track win-
dow to add automation events. You will find it easier to edit the data
you have recorded after using this command. To use this command,
first select either volume or pan from the Automation View pop-up of
the track you wish to edit (you must be in the Track window.) Select
the data you wish to edit, then choose the Automation Thin command.
DECK II will find straight lines in the data and delete the intervening
envelopes. This is a non-destructive process which you may Undo.

The Strip Silence command

This command functions like a non-destructive gate. When you have
audio selected in the Track window, the Strip Silence command will
auto-create regions from a selected range by non-destructively deleting
silent areas based on parameters you choose in the following dialog:

```
              Gate Parameters

   [  500  ]   noise threshold

   [  128  ]   frame size (samples)

   [  512  ]   release size (samples)

   [  OK  ]  [ Cancel ]  [ Default Values ]
```
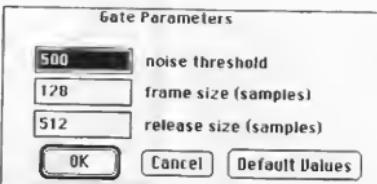
Audio that is at a level above the Noise Threshold will appear in new
regions. Areas of audio below the Noise Threshold for a duration
equal to the Frame Size will be non-destructively deleted. The Noise
Threshold can be any number between 0 (no volume) and 1023 (full
volume). The Frame Size indicates the number of samples in each
'window' DECK II uses to calculate whether audio is signal or noise.
If you choose too small a frame size, you may end up with more
regions than you desire. The Release Size tells DECK II how many
samples to include at the beginning and end of audio it has deter-

mined to be signal. The Release Size ensures that the beginning and end signal is included in each new region. Both Frame Size and Release Size are in samples, to allow highly accurate editing.

The Options Menu

The Options menu contains all of the commands you will need to configure MIDI input and output, configure SMPTE setup, enable basic automation recording and playback, and manipulate general features of the Track window display. Here is a list of the commands you will find on the Options menu, and a description of each:

The MIDI Setup command

If you are using DECK II without the Open Music System (OMS) installed, this command brings up the following dialog:
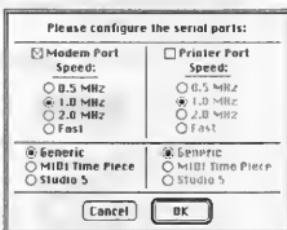
Use this dialog to configure DECK II for your MIDI setup. DECK II's MIDI functions allow you to synchronize your Session to MIDI Time Code (the computer translation of SMPTE time code) or play back a MIDI file with the Session. If you are using DECK II's MIDI capabilities, use this dialog to configure DECK so that it understands which port your MIDI interface is connected to, and to select the type and characteristics of the MIDI interface you are using. For more information about these capabilities, see the Synchronization and MIDI Window sections of this manual, and the individual owner's manual(s) for your MIDI interface(s).

If you are using DECK II with the Open Music System (OMS) installed, this command brings up the following dialog:
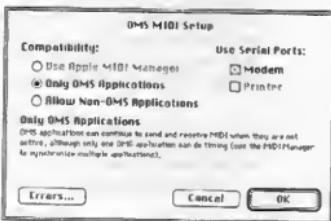
In this case, your MIDI setup has been configured via OMS. You can see and change this configuration using the OMS Setup application that comes with the OMS software package. Generally speaking, you should configure DECK OMS compatibility to accept **Only OMS Applications**, and you should avoid Apple's MIDI Manager. The MIDI Manager is notoriously slow, and will noticeably degrade DECK's performance.

Hint:

If you are running OSC's METRO sequencer on your Macintosh in sync with DECK, make sure to set OMS to allow **Only OMS Applications**. This will improve the speed and smoothness of the switch between the two programs during playback.

The SMPTE Format submenu

Use the SMPTE Format pop-up menu to select the SMPTE format you wish to receive and send when DECK II is synchronizing. (DECK II attempts to determine incoming time code format automatically, but you should always set it anyway to prevent time base problems.) You may choose between any of the following formats: 24 Frame (film), 25 Frame (PAL/SECAM video), 29.97 Frame (NTSC color video), 29.97 Drop-frame (NTSC wall clock color video), 30 Frame, and 30 Drop-frame.

24 frame is for most film applications, 25 frame is for PAL/SECAM video, 29.97 is for NTSC color video, 29.97 drop is for wall-clock accurate broadcast NTSC color video, and 30 frame/30-drop frame are misnomer formats that were originally used for black and white video, but are now generally used only for time stamping synchronization in audio-only applications (and, cleverly, for various film-to-tape pulldown/pullup compensations).

Hint:

If you are working in NTSC video, and someone sends you a video tape striped with 30 frame code on the address track, you can safely assume that the time code is actually 29.97 frame time base. This mix up is a leftover from the early days of time code.

The SMPTE Start Time command

The SMPTE Start Time command brings up this dialog:
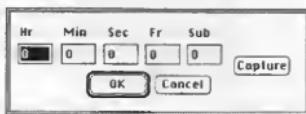
You will use the SMPTE Start Time dialog to offset DECK II's master tape counter by a specific number of SMPTE frames. You can think of this time as the current Session's zero time. If you then set DECK II to synchronize playback, the Session will begin to play when the SMPTE Start Time frame is received. For more information, see the synchronization section of this manual.

You can also use the Capture button in the SMPTE Start Time dialog to lift the current SMPTE frame from tape directly into the dialog. Remember, however, that capture functions are often not accurate if you are using longitudinal time code (LTC), because this timecode cannot be read at slow shuttle speeds.

If you are using vertical interval time code (VITC), the capture button will always lift the correct SMPTE frame address, even when your video deck is crawling or on a still-frame.

The SMPTE Online command

This command puts the current Session online, which means it is ready to synchronize to incoming SMPTE time code. To lock playback to incoming code, just select this command and press the Play button in DECK II's Transport window. This puts DECK II in standby mode. As soon as time code is detected, DECK II will begin to play back at the correct frame.

Important:

Remember, you will need a tape source with SMPTE time code on one track, and a SMPTE-to-MIDI time code converter/Mac MIDI interface in order to synchronize to SMPTE. (Mark of the Unicorn's MIDI TimePiece or Opcode's Studio 5, are examples MIDI interfaces with SMPTE-to MTC capabilities.) For more information, see the synchronization section of this manual.

Hint:

To record audio while online, just record-enable a track, select the SMPTE Online command, and press Record and Play buttons in DECK II's Transport window. This puts DECK II in record-standby mode. As soon as time code is detected, DECK II will begin recording, and DECK will automatically place the recorded audio at the correct time.

The Trigger Sync command

DECK II offers two types of synchronization. DECK's native mode is called 'continuous resync,' and is generally the more desirable of the two modes. When Trigger Sync is turned off, DECK II is in continuous resync mode. In this mode, DECK II watches all incoming SMPTE frames to determine if the speed of your source playback unit is correct. When DECK determines that the SMPTE playback source is slowing down or speeding up, DECK will alter the playback sample rate in real-time in order to compensate for the speed changes. When this happens, you may hear DECK audio playback slow down or speed up. This mode guarantees that your Session's digital audio will remain tightly synced to the SMPTE source.

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When Trigger Sync is turned on, the Session's playback sample rate will not be altered during playback. DECK II will still sync to the incoming SMPTE frame, and chase/lock correctly, but no playback speed adjustments will be made. Trigger Sync is designed specifically for users who know that their SMPTE source is absolutely time-locked. For video professionals, use Trigger Sync if you run your SMPTE source video deck with house sync (a black burst hooked to a video input). For audio professionals, use Trigger Sync if you run digital multitracks, or timecoded DAT as your SMPTE source, or if you have a multitrack audio recorder that is hooked to house sync.

Hint: Real-time sample rate conversion can degrade the general quality of the audio that is played back. For this reason, the best results are achieved when you run DECK II with Trigger Sync turned on, and your SMPTE source locked to house sync.

Hint: If you have a Pro Tools or Sound Tools II system, you also have the ability to augment your system with Digidesign's SMPTE Slave Driver or Video Slave Driver. If you use either of these devices, make sure to configure your hardware for Internal Mode (using the Option menu's Hardware Configuration command), and turn on Trigger Sync.

The Pulldown command

You can change the current Session's master playback sample rate by choosing the Pulldown command. When you choose this command, the following dialog appears:

Session Playback Rate Settings
Session Nominal Rate: 44100 Hz
Playback rate: 44100 Hz
[Pull-down] [Reset] [Pull-up]
[Cancel] [OK]
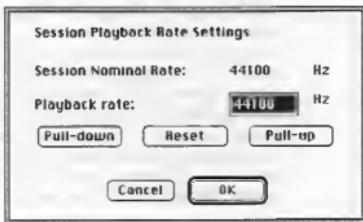
The **Session Nominal Rate** is the playback rate you chose when you created your Session. You may change the **Playback Rate** by typing a new value in this field. Increases in sample rate raise pitch and decrease Session duration. Decreases in sample rate decrease pitch and increase Session duration.

The **Pull-down** button automatically lowers the Playback Rate to a rate useful when editing audio to video transfers of film when you intend to go back to film (mag or other) for the final result. The **Reset** button changes the Playback Rate to the Session Nominal Rate. The **Pull-up** button automatically raises the Playback Rate to a useful rate for laying back your edited audio to mag film (or to DAT for transfer to mag film). This is a very specialized command useful in NTSC countries, and here is an oversimplified explanation of the scenarios in which you might use it. If this doesn't make sense to you, just forget you ever read it:

If you are rebuilding audio tracks to video telecine transfers of film by going back to the original location Nagra 1/4" tapes, digitize all audio from the 1/4" tapes at the 44.1 or 48 kHz rate. Then set the sample rate to **Pull-down**, and edit the sound to picture. When laying back the finished audio to DAT for transfer to mag (or direct to mag), **Reset** the pulldown rate. This will yield results that are time-correct for film, and is the preferred method for preserving audio quality.

If you have built audio tracks to video telecine transfers of film using audio files and effects from your sound libraries or hard disk (which are not location sound), then you can edit all audio tapes at the 44.1 or 48 kHz rate. When laying back the finished audio to DAT for transfer to mag (or direct to mag), choose the **Pull-up** option in the pulldown dialog. This will yield results that are time-correct for film.

Hint:

You can also use the Pulldown command to stretch or squeeze audio. For instance, if you need to fill a 30-second spot, but only have 24 seconds of audio, and your Session Nominal Rate is 44100 Hz, you can use the following equation to stretch the 24 seconds into thirty: $(24 \div 30) = (X \div 44100)$. Thus if you enter 35280 (X) into the Playback Rate, DECK II will stretch your audio to the desired length. Be warned, however, radical sample rate adjustments will not sound very good.

The Automation submenu

The track Automation submenu looks like this:

```
Mute All
Play All
Record All

Erase All
```

You will use this submenu to set global values to mute, play, record, or erase volume and pan automation on all tracks. (To learn about recording real-time automation, see the Mixer window information earlier in this chapter, and the MIDI Map Faders command on the Options menu. To learn more about drawing automation envelopes for volume and pan, see the Track window, explained earlier in this chapter.) The Automation submenu offers these choices:

Mute All:	Mute volume and pan automation playback on all tracks.
Play All:	Set volume and pan automation playback on all tracks to play.
Record All:	Enable volume and pan automation recording on all tracks.
Erase All:	Erase all recorded and drawn volume and pan automation.

Use these setting to enable recording and adjust playback of automation on all tracks. For more information about recording and editing automation see Chapters 5 and 6 of this manual.

The MIDI Map Faders command

This command allows you to map any MIDI controller (a modulation wheel, or J.L. Cooper FaderMaster, for example) directly to DECK II Mixer Window volume and pan faders. This mapping process is quite simple, and requires no text entry. Here's how it works:

To map a DECK II Mixer window fader to an external controller, just choose the MIDI Map Faders command. All of your faders will highlight green, to show you they are ready for mapping. Next, touch the fader or faders you wish to control. It (or they) will turn yellow to indicate they are ready for MIDI input. Now move the controller that

should control the selected yellow faders. These faders turn red to indicate they are mapped. To begin moving the faders from an external controller, just choose the MIDI Map Faders command to exit MIDI map mode.

Hint: You can follow the same directions to change or turn off mapping of individual Mixer window faders.

Important: You cannot use this function unless you have a Macintosh MIDI interface and a MIDI controller of some kind. DECK II does not directly support the J.L.Cooper CS-10.

The Mute MIDI Map command

This command temporarily stops your external controllers from moving DECK II faders in the Mixer window. It only functions if you have already mapped external controllers to faders using the MIDI Map Faders command. To turn external control back on, just choose the Mute MIDI Map command again.

The State Transition Time command

The State Transition Time command allows you to select a fixed automation fade time that will automatically be used whenever you record or play mixer automation using DECK II's Mixer States (located in the Transport window). When you choose the State Transition Time command, this dialog appears:
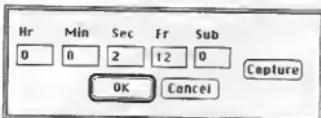
Use this dialog to enter the duration of the fade you wish to occur between the time you click on a Mixer State arrow, and the moment that the new mixer state arrives on the screen. DECK II automatically

fades to the new mixer state over this duration. Remember, these
fades are recorded if you are recording automation.

The Selection Tools Submenu

This submenu contains a number of specialized tools that help you
manipulate the Track window display, and move times and selection
ranges between Track window and the Transport window. These
commands are only available when the Track window is the active
window. The Selection Tools submenu looks like this:

```
Position At Beginning    ⌘[
Position At End          ⌘]
Position To Fit
Set Punch Time From      ⌘\
Set From Punch Time
Set Selection...
```
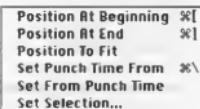
Here are brief explanations of the different commands on this menu:

Position at Beginning: This command automatically scrolls the Track
window to show you the beginning of the currently selected range or
region. This is a very useful command when you are zoomed in very
close, and you want to adjust region start time(s) without zooming out
to find the region start.

Position at End: This command automatically scrolls the Track
window to show you the end of the currently selected range or region.
This is a very useful command when you are zoomed in very close,
and you want to adjust region end time(s) without zooming out to find
the region start.

Position to Fit: This command performs the same function as the Fit
Selection icon. It automatically expands or contracts the display so
that the current selection fills the screen. This is true whether the
selection is a region or a waveform range. This command makes it
possible to view rapidly any specific audio range, region, transition or
event.

Set Punch Time from: This command automatically moves the start time of the current Track window selection to the **begin** counter and the **end time** of the current Track window selection to the **end** counter in the DECK II Transport window. Use this command when you want to select a waveform range or region for sample-accurate punch-in recording or loop mode playback.

Hint:

Any time you have a waveform range or region selected, you can press the 'C' key on your Macintosh keyboard to set a cue loop automatically. This automatically transfers the range or region's begin and end times to the Transport window and turns on Loop mode. Option + C turns off loop mode.

Set from Punch Time: This command performs a function that is the inverse of the Set Punch Time from command. It automatically reads the **start time** and **end times** from the Transport window and selects that range in the Track window. The range is selected on any track that currently has a selected range or insertion point. Remember, you can move and expand the selection using the Macintosh keyboard's arrow keys and shift+arrow keys, respectively.

Set Selection: This command brings up the following dialog box:

8

	Bar	Beat	Tick
Start Time	2	1	1
End Time	9	1	1

OK   Cancel
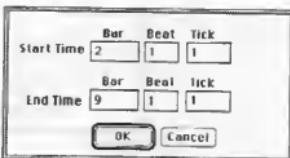
Use this dialog to enter the start and end times of the range you wish to select, then click OK. The range is selected on any track that currently has a selected range or insertion point. Remember, you can move and expand the selection using the Macintosh keyboard's arrow keys and shift+arrow keys, respectively.

The Snap to Grid command

This command turns DECK II's Track window grid on and off. When the grid is on, all range selections and range and region dragging will be constrained (stick to) the Track window grid. DECK II's Track window grid is a smart grid, in that it always adjusts to match the current units. If you are viewing waveforms by SMPTE frame, the grid will snap edits to frame. If you are viewing waveforms by quarter note, the grid will snap edits to quarter note. To turn off the grid, select this command a second time. Remember, the Macintosh keyboard's arrow key edits (as well as shift+arrow, command+arrow, etc.) all conform to the grid when the grid is on.

Hint: You can also turn the grid on and off using the Grid Setting icon, to the left of the Axis Units pop-up in the Track window.

The Set Grid Interval command

It is possible to manipulate the display resolution to a variety of different levels. If the Axis Resolution pop-up to the right of the Axis Units pop-up in the Track window does not offer you the grid units you desire, you may choose your own display resolution using the Set Grid Interval command. Choosing this command brings up the following dialog:

Hour	Min.	Sec.	Fr.	Subfr.	
0	0	0	4	0	Capture

OK   Cancel
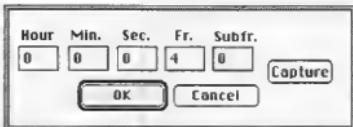
Enter the Grid Interval you desire. You may use the current SMPTE time by pressing the capture button.

The Set Nudge Time command

When you use the Command+arrow keys on a selected object or range in the Track window, DECK II physically moves the selected object or

range left one unit, right one unit, up one track or down one track.
You can change the nudge units in the Set Nudge Time dialog:

Hour	Min.	Sec.	Fr.	Subfr.	
0	0	0	1	0	Capture

OK   Cancel
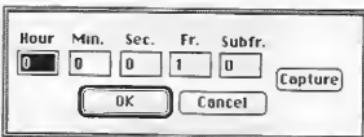
Enter the Nudge Time you desire. You may use the current SMPTE
time by pressing the capture button.

The Hardware Configuration command

This command brings up the Hardware Configuration dialog, which
looks like this:

Hardware Configuration

Audio Card: ProTools ▼

Synch Mode: Internal ▼
Input Type: Analog ▼
Digital Format: S/PDIF ▼
☐ Mic Input On

OK   Cancel
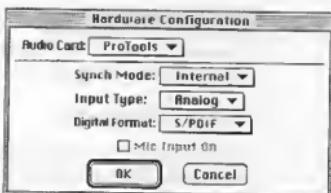
Use this dialog to choose the Macintosh NuBus card you wish DECK II
to use, and to configure the settings of that card. The Audio Card pop-
up will show you all of the audio cards currently installed in your
Mac.

AV Users: The Audio Card pop-up will display "AT&T Internal DSP." All other
commands in this dialog will be grayed out. If you have a NuBus card
installed you may choose to use it instead of your internal AV capabili-
ties.

When you choose an audio card, you can use the other controls in the dialog to configure that card. Here are explanations of those controls:

Sync Mode: Set this menu to Digital if you are recording digitally via the S/PDIF or AES/EBU digital inputs on your audio card. Otherwise set this to Internal.

Input Type: Set this menu to Digital if you wish to record from the S/PDIF or AES/EBU digital inputs on your audio card. Remember, when you do this, DECK II's inputs 1 and 2 will be taken from your digital inputs. When you are doing analog recording, set this to Analog.

Digital Format: Use this menu to choose your digital input/output format. Note that the Audiomedia II card only supports S/PDIF.

Mic Input On: This check box is only available when if you have an original Audiomedia card. That card has a built-in microphone preamp instead of digital input and output. When you turn this check box on, your original Audiomedia card will automatically mix its microphone input into inputs 1 and 2. Remember, Audiomedia and Audiomedia II cards have software input level adjustment. See the Input Level submenu form more information.

The Input Level submenu

If you own a Pro Tools or Sound Tools II system or a NuMedia card, this submenu is not available to you. All other hardware systems allow you to set the input level of the incoming signal. Use this submenu to adjust the input level for recording. Make sure that you watch the input VU meters on your Mixer window record track as you adjust this level, and attempt to set the input recording level as high as possible (without clipping). If the level is too high, the clip light will turn on. If you have a Sound Tools II or Pro Tools system or a NuMedia card, you will need to adjust the level of your input signal at its source.

The Session Menu

This menu contains commands available to you to perform on the entire session. Here is a list of the commands you will find on the Session menu, and a description of each:

The Session Info command

The Session Info command brings up this dialog:
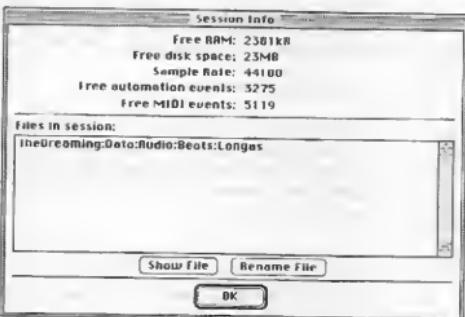
The Session Info dialog tells you how much free RAM you have, how much free disk space there is on the drive that contains the Session, and lists the Session's sample rate and total of free automation events. Below this basic information, you will find a list of all the soundfiles used in the current Session. You can use this list to track down a file by selecting that file and clicking on the **Show File** button. This will automatically switch you to the Finder, open the folder that contains the file, and select that file. You can rename a file by selecting that file and clicking on the **Rename File** button.

The Session End Time command

The Session End Time command brings up the following dialog:

Hour	Min.	Sec.	Fr.	Subfr.	
0	0	13	0	0	Capture

OK   Cancel
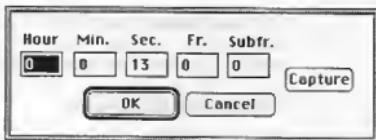
Use this dialog to change the end time for your Session. This command is useful when the Autostop at end of Session preference is turned on. Instead of stopping when the last sample of your Session is detected, DECK II will stop at the new end time.

The Compact Session command

The Compact Session command automatically compacts all of the audio files in the Session's Audio Files folder which are used in the current Session. Use this command to get rid of unused audio data (junk takes or unused solos, for example) in all soundfiles associated with the Session.

This is how audio files are compacted: DECK II looks at the list of audio regions and loops in each audio file. It then looks through the audio data in each file, and finds all audio data that is not used in any region. After the unused audio has been found, it is permanently deleted from the drive, and all region definitions are updated.

Important: Compaction is a destructive process, so make sure you understand what you're doing before you use it! It is particularly important that you understand the **Always Save Regions when Session is Saved** and **Rewrite Regions** preferences in the DECK II General Preferences dialog. These preferences have strong effects on the compaction process. Make sure to read about those preferences before you compact audio files or Sessions.

Important: Compact Session only compacts audio files located in the current Session's Audio Files folder. It will not compact audio files located elsewhere on the drive, or on other drives. This safety valve has been

built into DECK II to prevent the accidental compaction of soundfiles in a central sound effects library, or of soundfiles used in multiple Sessions. Make sure you always keep sound library files and shared soundfiles in a folders **outside** of the current Session's Audio Files folder.

The product of the compaction process is generally an increase in the available hard disk space. To compact a session, choose the Compact Session command. When you choose this command, you get this Handle dialog:
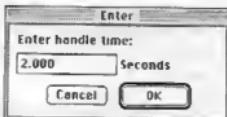
```
┌─────────────────────────────┐
│           Enter             │
│  Enter handle time:         │
│  ┌──────┐                   │
│  │2.000 │    Seconds        │
│  └──────┘                   │
│   ( Cancel )   ┌────────┐   │
│                │   OK   │   │
│                └────────┘   │
└─────────────────────────────┘
```

The **Handle Size** setting allows you to keep a little bit of extra audio data before every region start and after every region end, which will be useful in the future if you plan to crossfade the regions. You will probably want to set your handle size to at least 2 seconds for this purpose. To compact the Session, enter your handle size and click on the OK button. The compaction process may take a few minutes.

Note:

If you use entire soundfiles your Session, you will find that there is no unused audio data to delete from those files. In such cases, compaction may not increase your available disk space. For more information on using the Compact function to free disk space, see the Levels preference section of this manual.

The Export Session Regions command

The Export Session Regions command immediately saves all regions defined in the current Session into their source soundfiles. When you install DECK II, the program is set to save all regions to their source soundfiles whenever you save the current Session. This is a good basic configuration, because it assures you that your regions will always be saved. You may also choose at any time to save the regions out to their

soundfiles, even though the Session has not been saved. That is the purpose of the Export Session Regions command. You might do this, for example, if you have defined an interesting region of audio, but you don't wish to keep it in the current Session. In such a case you can use the Export Session Regions command to save the region, and then delete the region from the Session. Even though the region is not present in the Session, you will find that it has been saved into its source soundfile.

The Import Session command

This command is here for the convenience of original DECK owners. After you create a new Session, use this command to import an original DECK Session. Choosing this command brings up a standard file dialog. Use this dialog to select the original DECK Session you wish to import.

The Library Operations Submenu

The Library Operations Submenu offers commands used in the Library window. Here is a list of the commands available on this submenu, with explanations of each:

The Sort By Name and Sort By Size commands

The Sort By Name command will sort all regions in the Library window by name. The Sort By Size command will sort all regions by size.

The Update from Session command

The Library window will only display regions which have been imported into the session. If you would like regions you have created to appear in the Library window, choose the Update from Session command.

The Find File command

This command is available when you have a region selected in the Library window. It automatically switches you out to the Finder and highlights the audio file that contains the selected region.

The Windows Menu

This menu contains a list of the windows that are available in DECK II.
Choose the name of a window to open that window or bring that
window to the front. Note that the QuickTime window can only be
opened if you have already imported a QuickTime movie. (For more
information see the Import Movie command on the QuickTime menu).

Hint: When you are recording audio, DECK II does not create your wave-
            form overviews until you open the Track window. Since the creation
            of overviews may take a few moments, you should open the Track
            window only when you are ready to view and edit the audio wave-
            forms.

The Close Window command

This command closes the currently active DECK II window. To open
the window again, choose the name of that window on the Windows
menu.

The QuickTime Menu

This menu contains all of the commands you will need to open, close,
edit and export (mixdown) QuickTime movies in DECK II, as well as
configure live video. Here is a list of the commands available on this
menu, with explanations of each:

The Import Movie command

Use this command to import a QuickTime movie for synchronized
playback with audio tracks. When you choose the Import Movie
command, this dialog appears:
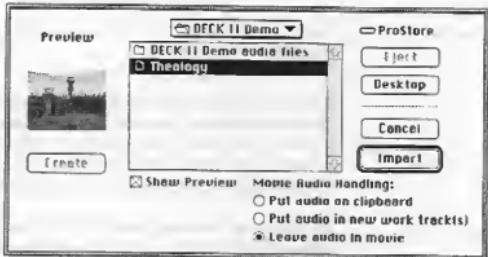
To import a QuickTime movie, use the file selector area to find and highlight the movie you want. If you have the **Show preview** option checked, you will see the poster frame of that movie. If the selected movie has no poster frame, click on the **Create** button to create a preview frame. Once you have selected a movie, you should choose what you want to do with that movie's existing audio (if there is any). You must select one of the following options:

Put audio on clipboard: This option is a **conversion** option. It automatically removes the source audio from the QuickTime movie and converts it to 16-bit monophonic Sound Designer II file(s). These files are created in the Session's audio files folder, and then placed on your Macintosh Clipboard for pasting into any track in the Track window. To guarantee that the Clipboard file will sync to the imported movie, you will need to drag or paste it so that it starts at the Session zero time.

Hint:

Remember, if the source audio was stereo, you will need to select two tracks when you paste the audio.

Put audio in new work track(s): This option is a **conversion** option. It automatically removes the source audio from the QuickTime movie and converts it to 16-bit monophonic Sound Designer II files. These files are created in the Session's audio files folder, and then placed onto

two new playlists on work tracks at the bottom of the Track window. To play back these tracks, click on the track name area(s) to select the track, then drag the track up to one of the play tracks. (You can also use the playlist pop-up at the bottom of any track in the Mixer window to move these new playlists up to playback tracks.) Choose this option to make sure that the original QuickTime audio will be included in any 16-bit stereo mixdowns and in exported QuickTime movies.

Leave audio in movie: This option performs no file conversion. The original audio remains in its source form, and is still associated with its QuickTime picture. This audio will play back along with all DECK II 16-bit tracks when you play back the Session. Note, however, that this audio left in its movie will generally play back through your Macintosh speaker or audio output. Choose this option if you wish to use the original QuickTime audio as guide audio only. When you leave your audio in the movie, you will get an extra track of playback, but that track will be erased when you Export your finished QuickTime movie with its new audio.

The Export Movie command

You will use the Export Movie command to create master mixdowns of the QuickTime movie you are editing in the current Session. The Export Movie command allows you to create new QuickTime movies that contain or reference 8- or 16-bit mono or stereo audio interchange file format (AIFF) audio tracks at a variety of sample rates. The exported movie contains all of the edited and audio with automation moves included. You can think of the Export Movie command as a Mix-to-disk command for picture and sound. It is usually the last step in the QuickTime audio post-production process, and the result can be played back on any Macintosh. When you choose the Export Movie command, the following dialog appears:
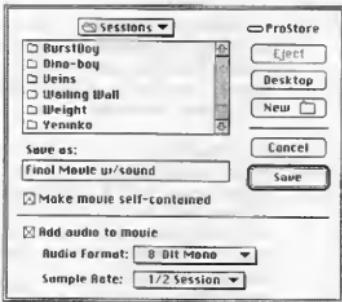
To export your QuickTime movie, choose a destination folder and type in a name for the movie. Then set your preferences for the format of the movie you wish to create. The following options are available:

Make movie self-contained: This option creates an entirely new, self-contained movie. The self-contained movie will consist of a single QuickTime (Movie Player) document that contains all picture and sound. According to QuickTime specifications, the sound and picture are mixed together, creating a movie that is fully transportable and plays efficiently (quickly). Note that a self contained movie will take a while for DECK II to create, because it requires an extra step ('flattening') which can be time consuming. Remember, a self-contained movie will generally be quite a large document.

Hint:

Make a movie self-contained when you want to create a single document for delivery. If you are simply performing test edits and mixdowns, do not make the movie self-contained. When the movie is not self-contained, a new, extremely small (typically around 30K) movie document is created. Like a DECK II Session, this document simply references the source sound and picture files. The Movie Info

command in Apple's QuickTime Movie Player can always be used to determine which audio and picture files are used by a movie that is not self-contained.

Add audio to movie: This option determines whether the audio from the current DECK Session will be mixed, converted and added to the finished movie. You will generally want to have this option turned on. When it is turned off, a 'silent movie' document is created.

Audio Format: Use this pop-up menu to choose the audio bit-depth you wish for your audio mixdown file when the audio is mixed and the movie is exported. You may choose between 8-bit mono, 8-bit stereo, 16-bit mono or 16-bit stereo. Generally you will use the 8-bit mono format for playback from the desktop via the Mac speaker. (This format also requires less disk space and plays back more efficiently.) If you wish to create a high-fidelity master, choose 16-bit stereo. An AIFF soundfile is always created, unless you chose 'Make movie self-contained,' in which case the audio is placed directly into the movie picture data.

Important: Apple's Sound Manager is capable of enhancing the playback capabilities of most Macintoshes. Forthcoming versions of the Apple Sound Manager will allow playback of 16-bit stereo AIFF files directly from the Mac speaker (only 8 of the bits actually play). This new software, in tandem with Digidesign output drivers, may make it possible to create and exchange movies containing 16-bit stereo files as the standard format. At the time this software was released, these enhancements are not yet available, and 8-bit mono is still the most universal format for QuickTime audio. Consult Apple and Digidesign for the most recent information.

Sample Rate: Use this pop-up to select the sample rate you wish to have for your final QuickTime movie audio. Generally speaking, higher sample rates are better because they offer higher fidelity. However, they also require more disk space. For the highest-fidelity results, set this pop-up to **Full Session**. This will mix down your

audio at 44.1 kHz (or 48 kHz, depending on the sample rate of the Session). Setting this pop-up to **1/2 Session** will mix down and resample audio to 22.05 kHz. The **1/4 Session** will mix down and resample audio to 11.025 kHz. The lower the rate, the noisier the audio, so choose the lower rates with care.

Hint: If you are mixing down a QuickTime movie with 8-bit sound for desktop playback, the **1/2 Session** setting will produce very good results.

When you have chosen your options, click on the Save button to export the movie. Remember, only one QuickTime movie may be opened at any time. To close the current movie, use the Dispose Movie command.

The Dispose Movie command

This command closes the current Session's QuickTime movie, which you loaded using the Import Movie command on the QuickTime menu. DECK II only allows you to have one QuickTime movie open at any time. Use this command to clear the Session's QuickTime movie so you can import a different movie.

The Get Movie Info command

The Get Movie Info command brings up this dialog:
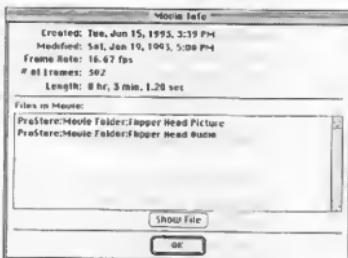
The Get Movie Info dialog contains information about the creation and modification dates, frame rate, frame count and duration of the QuickTime movie that is loaded into the current Session. Below this basic information, you will find a list of all the QuickTime files and soundfiles used in the current movie. You can use this list to track down a file by selecting that file and clicking on the Show File button. This will automatically switch you to the Finder, open the folder that contains the file, and select that file.

The Sound command

This command toggles QuickTime desktop audio playback on and off. It is only available if the QuickTime movie was imported with the 'Leave audio in movie' option selected. This allows you to hear all of the 16-bit audio tracks within DECK II play back along with the 8-bit audio in the source QuickTime movie. Remember, the QuickTime audio will come from your Mac speaker or CPU audio output. You can adjust the volume of this playback using the Sound control panel in your System Folder's Control Panels folder.

The Copy Frame command

This command copies the current frame of the Session's QuickTime movie to the Macintosh Clipboard. You can then paste the frame into the Scrapbook or into any compatible Macintosh program (Microsoft Word or Adobe PhotoShop, for example). Note that the copied frame is always the one you see in the QuickTime window when you choose the Copy Frame command. The frame is always copied at the size you see.

Note: You can also use the Copy Frame command to copy the current frame of Live Video to the Macintosh Clipboard. For more information on Live Video, see below.

The Set Poster command

This command allows you to set and save the current QuickTime movie's poster frame. The poster frame is the frame that is used by different Macintosh programs (as well as the operating system) as a symbol of the movie. For example, the icons of self-contained QuickTime movies that appear on the Mac desktop are tine versions of the poster frame. (The poster frame is also used as the preview frame when programs like DECK II show QuickTime movies for importing or opening.) To set the poster frame, scrub or play the current Sessions QuickTime movie until you see the frame you want. Then choose the Set Poster command.

The Chase Positioning command

This command automatically scrolls the QuickTime movie whenever you move regions or drag region boundaries in the DECK II Track window. The QuickTime movie frame you see will always be the frame that is at the **beginning** of the current region. Use this function during synchronization editing to 'spot' sound effects, music and dialog to specific QuickTime movie frames.

The Live Video command

If your computer has video input capabilities (the Macintosh AV machines or RasterOps MediaTime board, for example) you can connect source video to your hardware and play live video directly onto your Mac screen in the QuickTime window. Simply turn the source video on, then choose the Live Video command. DECK II will automatically open the QuickTime window to view the Live Video. DECK II does not yet not record or compress video.

The Configure Live Video command

When you choose this command, DECK II will open a dialog similar to this one:
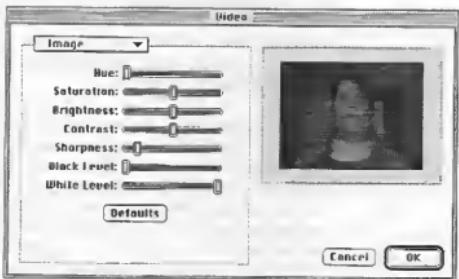
This dialog is specific to your hardware. For more information about configuring live video, consult the owner's manual for your specific hardware.

The Size submenu

This command resizes the QuickTime window. Depending on your hardware, you may choose from the following size options: Quarter Size, Half Size, Full Size, Double Size, and Quadruple Size.

DECK II's Destructive Signal Processing

Although DECK II is primarily intended as a real time multitrack audio recorder and editor, it does offer a number of constructive/destructive, non-real time processes which will help you in certain situations. These processes are all available under the Destructive Effects submenu on the Process menu. Here are short explanations of how they work:

Normalization

Often, after recording or adding a track or region, you may find that the overall level seems a bit low, even when it is turned all the way up. In such a case, you need to increase the track's volume in order to bring it to the playback level you desire. If you encounter a case where a track's level seems too low, regardless of its monitor setting, you may wish to **normalize** that track.

When you ask DECK II to normalize a track or region, this is what happens: DECK II searches the entire region (or regions) for the highest amplitude (volume) peak level. Then DECK II measures the difference between the highest level and the maximum allowable level. In the final step, DECK II adjusts the overall level of the selected region (or regions) so that the highest peak matches exactly the maximum allowable level. By doing this, you get the most out of the 16-bit resolution afforded by digital audio recording, and you bring the overall track level to its maximum without clipping or distorting.

Remember that a noisy, low-level audio region will not be fixed miraculously by normalization. Normalizing such a track will create a noisy, high-level track. Normalization *does* guarantee that you'll get the most out of the 16 available bits of amplitude resolution, but the best medicine for a poorly-recorded track is re-recording.

Note:

Unlike most audio workstation software, DECK II allows you to execute constructive/destructive effects on multiple regions at once. When you normalize multiple regions at one time, all regions are normalized **as single units**. Each region will be considered independent, and will be normalized to its highest possible amplitude. If instead you wish to apply one gain to a group of selected regions, use the **Group Normalize** command.

Reversal

Reversal is a specialty function that performs an edit which is quite difficult in the analog world. It takes the audio data in the selected region or regions and flips it around so that the soundfile is backwards. DECK II accomplishes this swapping the first and last samples, then the second and second-from-last, etc. **This process does not alter the fidelity of the source file in any way**, and it can be undone simply by reversing the same region(s) again.

Phase Inversion

This effect turns the selected region or regions 'upside-down,' making the new waveform a mirror image of the original. Phase-inversion is accomplished by multiplying all samples by -1, thereby making all positive amplitudes negative and all negative amplitudes positive. An inverted waveform **sounds the same** as the original. This is a very useful function for sound editors who are creating ambience or tonal forwards-backwards loops. In instances where an audio region is followed by a backward copy of itself, the phase of the reversed copy must be inverted to maintain the slope of the waveform and prevent a 'pop' at the transition. **Like reversal, this process does not alter the fidelity of the source file in any way**, and it can be undone simply by inverting the same region(s) again.

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Important: All DECK II destructive effects allow you to execute the process on the original data or to create a copy of that data and execute the process on the copy. **It is always a good idea to execute destructive processes on a copy of the original data.** This is true for two reasons. First, by executing these processes on a copy, you never endangered the source audio data (normalization, for example, cannot be undone). Second, if you execute a process on the original region data, all instances of that region within all Sessions will be changed. Change the original source data only if this is your desired effect.

This concludes the Reference chapter of the manual. If you are curious about a specific DECK II recording, mixing, or editing task, see the earlier chapters of this manual. Otherwise, consult the Index to find the location of the information you need.

APPENDIX

Fine-tuning and Troubleshooting Your System

Unlike most of the Macintosh programs you run now, DECK II really pushes your Mac to its performance limits. DECK II is using your Mac to do the most it can possibly do, and because of this you will have to keep certain points in mind. The information listed below may help you fine-tune your system to keep as fast and efficient as possible. If you are having trouble recording tracks, due to computer or drive speed, consider the following:

Drive speed is more important than processor speed. DECK II will perform without problem on most Macintosh-family computers. Even with a Color Classic and a Audiomedia LC card (the slowest combination), you should be able to record and play all tracks. If you are having any type of recording problem, it is probably dependent on your drive (or on some internal software conflict, such as **File Sharing**, which should be turned off when you run DECK).

DECK II requires a hard disk that has a minimum *average* access time of 27 ms and a sustained throughput of 300 KB/second or more. Manufacturers are generally most concerned with selling hardware, so they are often not the best source for the average access time of the drives. Digidesign has tested a number of hard drives, and determined which ones work, and which ones don't. That list is also contained in the appendix of this manual, and you should consult it before purchasing a hard disk for four track recording.

If you already have a hard disk, and it seems to be too slow for recording, try optimizing or reformatting the drive. Often, the reason that your disk may choke during recording, is that the remaining open disk areas exist as tiny segments that are spread all over the drive. These segments take much longer to find, and hence the slow-down. Disk optimizing software, such as Norton Speed Disk™, search your drive and rearrange it so your files (and open disk space) are no longer fragmented. This often speeds up the drive significantly. If this doesn't work, remember that it is possible that your disk is too slow. If it is still under warranty, you may wish to have it benchmarked to judge if the manufacturer's information was false. If the drive is not as fast as claimed, contact the manufacturer directly.

Throughput is a factor. As far as drive speed is concerned, average access time is not everything. A high-performance drive needs a good combination of average access time and throughput speed (in Kbytes per second). Although there is no magic throughput number, you should make sure that any drive you are considering for audio purposes compares favorably with the drives recommended by Digidesign. Really, the best thing you can do when considering a drive is to test the specific drive with your system before purchase.

Keep the system clean. DECK II is a program that accomplishes most of its important tasks in real time. This means that DECK II is adjusting many facets of the audio as playback occurs. For this reason you should make absolutely sure that your System is as simple as possible. You should attempt to avoid INITs and background programs which are always present, doing something behind the scenes. These programs may consume valuable processor time, which you need for DECK II. Specifically, environments such as **System 7 File Sharing, Norton DiskLight, Disk Express II, certain virus-checkers, screen savers, background data compression utilities, and background FAX receivers may cause you a host of speed problems, if you run them while running DECK II.** So, for the best DECK II performance results, keep your System as simple and clean as possible. **Apple's Extension Manager (available on most BBSs)is an elegant tool for managing your Extensions. It is highly suggested.**

Keep MIDI trimmed down to a minimum, and mute tracks you don't need during record: DECK II is an audio recording and mixing environment that supports simultaneous MIDI playback and recording (in background sequencers). As such, DECK II puts full emphasis on audio. If you are attempting to play back extremely intense amounts of MIDI while recording DECK II tracks, you may run into speed or signal degradation problems. Although *this will not happen in normal use situations*, you may be able to cause problems if you use the MIDI manager to split playback of 32 tracks (each of which is sending hundreds of messages per second). If, for some reason, you wish to play back such a MIDI file, you may wish to filter controller informa-

tion, or mute some of the MIDI tracks while *recording* audio tracks. You will generally not encounter these problems during playback.

Don't use the MIDI Manager if you don't have to: Apple's MIDI Manager is extremely useful (in fact, necessary) in certain situations. If you have a MacProteus, or other non-OMS MIDI tone-generating NuBus card in your Mac, or if you run non-OMS software in the background, you will need the MIDI Manager (and its PatchBay) to route MIDI to the card(s). If do not have one of these cards (or a similar device), *don't use the MIDI manager.* The MIDI Manager is very well designed as a routing and timing tool for MIDI-only applications, but it degrades the overall performance of real time hard disk recording and playback by 20% to 40%. Although DECK II functions quite well with the MIDI Manager, you will find that the DECK II interface works more much smoothly when the MIDI Manager is not installed.

Memory Management Hints:

If you receive Disk Too Slow messages or out of memory errors, remember:

- On slow disks, use the Memory and Storage preference on the File menu's Preferences submenu to increase the disk buffer size. This will increase overall memory required, but will decrease disk read frequency and put less strain on your drive.

- For better overall program performance, increase the memory partition for DECK II by selecting it in the Finder and choosing the File menu's Get Info command. Then increase the Preferred memory to the maximum possible. 6000K or higher will improve overall performance.

- You can always decrease the amount of RAM required by DECK II by decreasing the Max. play tracks using the Memory and Storage preference the File menu's Preferences submenu. Disk buffers are only allocated for play tracks, so decreasing your play track count will decrease the number of buffers that will be placed in RAM.

Troubleshooting Hints:

If you are having problems with DECK II, try the following steps:

- If you get a message stating "Problems Initializing Playback Engine, Audio hardware may not be supported," throw away the "Deck Preferences" file in your System folder's Preferences folder. Then restart DECK II. A new preferences file will be built automatically.

- If you get "Bad F-line" errors or lockups, make <u>absolutely sure</u> that your SCSI chain is correctly terminated and that each device has its own SCSI ID number. To test this, unhook ALL EXTERNAL SCSI drives and restart DECK II. If DECK II functions correctly, then you know that your SCSI chain is causing the problem. You may want to try an active SCSI terminator, rather than the standard passive type.

- Try not to run any Extensions and Control Panels that you do not need. If possible, stay away from screen savers, background virus checkers, Disk Express II, Norton DiskLight, reminder utilities, System 'speed enhancers' and any 'cute' shareware programs and public domain Extensions designed to add functionality of increase system speed. These are often untested on serious Macintosh systems.

- If you have an 840AV or 660AV Macintosh or a Spectral Innovations NuMedia card, use a standard stereo mini-plug in audio inputs and outputs. <u>DO NOT</u> use a 3/4" (long) stereo mini-plug in

the input. If you have problems with 'scratchy' sounding audio, this is because the mini-plugs are not making solid contact. Try jiggling them, or better yet, lightly squeeze the mini-plug contact with a pliers to make it fit more snugly into the housing (obviously this is NOT recommended by Underwriter's Laboratories).

- **If you have an 840AV or 660AV Macintosh or a Spectral Innovations NuMedia card,** and you encounter a "System Error -754," choose the Sound Control Panel and make sure that the Effects are turned off, and the sample rate is set to 44.1 or 48 kHz (whatever the current Session is set to).

- **If you have a Spectral Innovations NuMedia card,** and you hear noise (light buzzing) every second or so in the audio while recording and playing back, this is due to electrical interference within your Macintosh. To remedy it, open your Mac and move the NuMedia board to a different slot, making sure that it is not touching (or extremely close to) any drive ribbon cables or power supply connectors.

Recommended Hard Disks

Most standard Macintosh SCSI hard disk drives that meet the 28 ms access time performance requirement should work well with the system. However, Digidesign has found that some manufacturers do not meet their published specifications, or use inefficient software drivers that slow down the performance of an otherwise adequate disk mechanism.

The list of recommended hard disks is always being updated, and Digidesign can supply you with the current list of recommended drives. **(If you are a registered Digidesign customer, contact Digidesign at 415-688-0600, between 8:30AM and 5:00PM PST.)** "Highly recommended" models have been tested at Digidesign and found to work very well with the Audiomedia, Sound Tools II and Pro Tools systems. "Recommended" drives have been reported by users to work

properly, but have not been subjected to in house worst-case testing conditions (for example, highly fragmented disks, multiple devices on the SCSI bus, etc.).

When choosing a disk drive, remember that it is the brand and model of the drive mechanism that is important, not the brand name of the reseller/repackager. For example, a APS 1.2 gigabyte external hard drive could contain any of three different drive mechanisms. Remember to check the brand name <u>inside</u> the box, not the one on the outside.

Suggested Reading

Audio in Media, Stanley R. Alten, Wadsworth Publishing Company, Belmont, California, 1986

Principles of Digital Audio, Ken. C. Pohlman, Howard W. Sams and Company, Indianapolis, Indiana, 1985

Random Access Audio, David Miles Huber, Digidesign, Menlo Park, California, 1989

Electronic Musician Magazine, P.O. Box 3714, Escondido, California, 92025

Keyboard Magazine, 20085 Stevens Creek, Cupertino, California, 95014

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